

# MONTHLY WEATHER REVIEW.

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## CLIMATOLOGICAL DATA FOR NOVEMBER, 1912.

## DISTRICT NO. 1, NORTH ATLANTIC STATES.

Prof. WILFORD M. WILSON, District Editor.

## GENERAL SUMMARY.

Although conditions differed much from those usually experienced in the eleventh month, comparatively little comment seems to be required by the general features of the weather in the North Atlantic States during November, 1912. For the most part, the month was characterized by features similar to those of October, making the entire autumn somewhat distinguished for its agreeable weather, with temperatures averaging considerably above the normal, abundant sunshine, and no more rain in most sections than was actually needed. The following table summarizes the leading features of meteorological interest for the various sections of the district:

States, or parts of States, within district No. 1.	Temperature.				Precipitation.				Average number of—	
	Average.	Departure.	Highest.	Lowest.	Average.	Departure.	Greatest total.	Least total.	Rainy days.	Clear days.
New England.....	39.6	+2.2	76	5	3.59	- 0.37	6.34	0.95	8	13
New York.....	41.2	+3.1	76	0	3.37	+ 0.30	5.16	1.40	8	12
Pennsylvania.....	43.4	+3.2	78	7	2.67	- 0.07	4.83	1.02	7	10
New Jersey.....	45.3	+2.4	76	11	3.43	- 0.03	8.12	2.02	6	15
Maryland, Delaware, and District of Co- lumbia.....	44.7	+2.0	79	10	2.14	- 0.61	3.80	0.68	5	16
West Virginia.....	43.5	+1.6	77	12	1.54	- 0.36	2.86	0.82	4	12
Virginia.....	46.7	+1.7	81	15	2.36	+ 0.04	4.96	1.50	4	15

## TEMPERATURE.

Only seven stations in the entire district recorded temperatures averaging less than the November normal. Four of these are located near the Atlantic coast in Maryland and three near the coast in New England. Over most sections the temperature averaged about 3° higher than usual in November, and means for the month ranged from 30.2° at Van Buren, Me., to 50.8° at Eastville, Va. The warmest period extended from the 5th to the 12th or 13th and the maximum temperatures at practically all stations occurred near the beginning or the end of this period. Maximum temperatures of 70° or above were quite general as far north as central Connecticut, while in the northern New England States the maximum temperatures were below 70° at all stations and below 60° in some cases.

Brief cool periods occurred about the 2d-4th, 16th-19th, and 28th-29th, but on all other dates temperatures were but little below, if not above, the normal. The minimum temperatures for the month occurred chiefly within the second and third of these cool periods and ranged from 30° at Cape May City, N. J., to 0° at Indian

Lake and Morehouseville, N. Y. Probably no locality within the district escaped the occurrence of freezing weather until the end of the month. Killing frost occurred on the 3d or 4th at practically all places in the district that had escaped it until then.

## PRECIPITATION.

Precipitation was below normal at about 60 per cent of the stations, but the deficiency in nearly all cases was slight. The total amount for the month was not generally less than 2 inches, except in central Maryland and the upper sections of Virginia and West Virginia. In a few limited localities it was slightly less than 1 inch, but it is believed that notwithstanding the long rainless periods in some southern sections the rainfall was sufficient in all cases, except possibly in some parts of Virginia and Maryland, where the bulk of the month's precipitation came in the rainfall of one date, the 7th.

From central Pennsylvania northward there were considerable amounts of precipitation in each decade, so that it may be said that precipitation was generally well distributed through the month.

The principal storms were those of the 7th-8th and 24th-25th. The former gave instances of rains exceeding 2.50 inches within 24 hours at two stations in Maine, two in New York, one in Pennsylvania, three in New Jersey, and one in Maryland. The latter was in the form of snow in most sections and was unusually heavy over a considerable area extending from Pennsylvania into New England. At Oxford, N. Y., the snowfall of the 24th amounted to 17 inches. Another snowstorm occurred on the 28th and affected chiefly the southern part of the district, where the fall was as much as 6 inches in some localities. Very little snow remained on the ground until the end of the month, except in the mountainous sections of the northern part of the district.

## MISCELLANEOUS.

The principal rivers remained at low to moderate stages throughout the month, though a very noticeable swell in the streams followed the heavy rains of the 7th and 8th.

The percentage of the possible sunshine at 12 representative stations averaged 54, which exceeds the percentage obtained last September and is considerably above the usual figure for November. The percentage of the possible sunshine was remarkably high in the southern and central parts of the district, being 63 at Philadelphia and Atlantic City and 67 at New York, but the relative amount of clear weather was less at the north, the sunshine percentage at Eastport, Me., being only 37. The average number of clear days for all stations in the district was not less than 13.



TABLE 1.—Climatological data for November, 1912. District No. 1, North Atlantic States.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.						Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.				
Maine.																						
Bar Harbor.....	Hancock.....	20	26	38.3	- 0.6	63	7	18	17	32	5.73	+ 0.94	2.00	0.5	8	14	4	12	sw.	William Miller.		
Cornish.....	York.....	778	57	39.2	+ 4.1	69	8†	14	19	38	3.82	- 0.40	1.42	1.5	6	12	9	9	w.	T. H. West.		
Eastport.....	Washington.....	53	40	38.8	+ 2.0	60	7	21	17	25	2.86	- 1.22	1.69	2.0	12	3	12	15	sw.	U. S. Weather Bureau.		
Fairfield.....	Somerset.....	90	27	37.6	+ 2.2	63	7	15	29†	32	2.59	- 0.23	0.95	2.2	6	14	5	11	.....	E. F. Parker.		
Farmington.....	Franklin.....	450	15	34.2	+ 1.1	60	7†	14	29	32	4.62	+ 1.29	1.84	9.5	8	9	11	10	sw.	State Normal School.		
Gardiner.....	Kennebec.....	163	20	38.8	+ 2.1	64	12	15	29	32	4.64	+ 0.80	1.46	2.0	7	15	4	11	sw.	Samuel D. Soule.		
Greenville.....	Piscataquis.....	1,140	8	32.2	.....	58	6	10	17	26	4.17	+ 1.40	1.08	14.5	10	.....	.....	.....	.....	U. S. Weather Bureau.		
Houlton.....	Aroostook.....	362	10	36.6	.....	65	7	14	30	26	0.95	- 1.10	0.40	9.0	4	22	3	5	s.	Bangor & Aroostook R. R.		
Lewiston.....	Androscoggin.....	185	38	37.6	+ 1.9	62	7†	20	17†	30	4.24	+ 0.27	1.65	2.2	8	11	9	10	nw.	Union Water Power Co.		
Madison.....	Somerset.....	257	9	34.4	.....	62	8	14	17	30	5.17	+ 2.26	2.54	5.5	7	16	0	14	nw.	William Jardine.		
Millinocket.....	Penobscot.....	386	9	33.5	.....	59	7†	14	17†	28	6.34	+ 3.00	2.97	12.6	11	8	4	18	nw.	F. C. Bowler.		
North Bridgton.....	Cumberland.....	450	19	38.6	+ 1.6	66	12	18	17†	32	3.84	+ 0.33	1.70	8.5	6	12	10	8	ne.	G. E. Chadbourne.		
Orono.....	Penobscot.....	129	43	39.4	+ 5.2	62	8	17	17	31	2.92	- 0.95	1.38	T.	6	4	16	10	sw.	Agricultural Exp. Station.		
Patten.....	.....do.....	550	10	31.04	.....	55d	5†	15	19	29d	4.51	.....	2.00	15.0	6	9d	2d	15d	sw.	Bangor & Aroostook R. R.		
Portland.....	Cumberland.....	99	41	39.4	+ 1.8	61	5	20	29	25	3.58	- 0.22	1.25	T.	8	11	9	10	sw.	U. S. Weather Bureau.		
Presque Isle.....	Aroostook.....	.....	3	31.4	.....	54	6	13	29	20	2.78	.....	0.60	17.0	8	5	3	22	w.	S. L. Merriman.		
Rumford Falls.....	Oxford.....	505	19	35.2	+ 1.1	60	7	18	17	23	3.70	+ 0.37	1.46	10.9	8	16	6	8	nw.	Charles A. Mixer.		
Van Buren.....	Aroostook.....	510	7	30.2	.....	50	7	14	17	22	4.38	.....	2.02	14.5	13	7	7	16	w.	J. M. Thomas.		
Winslow.....	Kennebec.....	90	17	38.4	+ 4.0	65	21	8	22	47	3.52	+ 0.37	1.33	1.5	5	15	3	12	w.	Hollingsworth & Whitney Co.		
New Hampshire.																						
Alstead Center.....	Cheshire.....	1,120	8	37.0	+ 2.0	62	6	14	29	28	3.45	- 1.07	1.22	2.0	8	15	4	11	sw.	Frank Dewing.		
Benton.....	Grafton.....	.....	3	35.1	.....	59	6	9	29	33	2.71	.....	1.47	9.0	7	14	3	13	nw.	State Sanatorium.		
Bethlehem.....	.....do.....	1,470	20	34.8	+ 2.2	60	7†	9	29	31	2.43	- 1.28	0.74	5.5	10	9	3	18	sw.	Benjamin Tucker.		
Concord.....	Merrimack.....	350	52	39.4	+ 2.6	68	12	17	4	37	3.74	+ 0.35	1.23	T.	7	7	13	10	nw.	U. S. Weather Bureau.		
Durham.....	Stafford.....	88	17	38.6	- 0.4	66	12	16	18	31	2.30	- 2.18	1.05	.....	4	19	3	8	nw.	Agricultural Exp. Station.		
Franklin.....	Merrimack.....	440	13	38.5	+ 2.7	69	6	14	4	49	4.12	+ 1.72	1.37	1.0	9	16	5	9	w.	Dr. C. P. Webster.		
Grafton.....	Grafton.....	863	26	35.5	+ 1.3	65	12	8	29	40	3.77	+ 0.15	1.60	3.0	7	15	4	11	nw.	P. R. Kimball.		
Hanover.....	.....do.....	603	78	37.4	+ 3.8	64	6	12	29	36	2.30	- 0.73	1.08	0.6	7	11	8	11	nw.	Dartmouth College.		
Keene.....	Cheshire.....	506	27	38.4	+ 1.7	68	12	12	29	39	3.12	- 0.80	0.73	0.5	8	12	7	11	nw.	Samuel Wadsworth.		
Nashua.....	Hillsboro.....	125	27	39.8	+ 1.6	68	7†	18	19	36	3.08	- 0.90	1.35	0.5	8	.....	.....	.....	.....	Jackson Co.		
Newton.....	Rockingham.....	.....	24	39.6	+ 1.8	70	12	15	29	38	3.30	- 1.13	1.05	T.	4	13	10	7	nw.	W. C. Gale.		
Plymouth.....	Grafton.....	500	24	35.8	+ 3.1	63	12	13	4	34	3.54	- 0.38	1.53	1.5	8	14	4	12	w.	Hattie G. Trow.		
Vermont.																						
Bloomfield.....	Essex.....	.....	5	33.7	.....	59	6†	6	29	34	2.93	.....	0.85	8.5	14	10	8	12	s.	Lyman Falls Power Co.		
Cavendish.....	Windsor.....	910	9	37.1	.....	68	12	11a	29	40	2.69	.....	0.87	T.	9	9b	9b	10b	w.	E. D. Kingsbury.		
Chelsea.....	Orange.....	840	17	34.4	+ 1.2	66	7	5	29	34	2.85	- 1.33	1.23	5.0	6	9	7	14	s.	W. F. Dewey.		
Manchester.....	Bennington.....	980	13	38.4	.....	64	6	13	29	39	2.69	.....	1.16	5.0	7	1	13	16	sw.	N. M. Canfield.		
Somerset.....	Windham.....	2,096	.....	35.5	.....	63	6	11	19	34	3.62	.....	1.21	12.2	10	10	6	14	sw.	J. Albert Holmes.		
St. Johnsbury.....	Caledonia.....	711	19	35.5	+ 2.2	61	7	11	29	34	2.78	- 1.18	1.56	1.3	11	8	9	13	nw.	Fairbanks Museum.		
Woodstock.....	Windsor.....	700	20	37.2	+ 3.4	63	12	12	28†	42	3.14	- 0.37	1.97	2.0	5	5	7	.....	.....	John S. Eaton.		
Massachusetts.																						
Amherst.....	Hampshire.....	222	23	40.6	+ 2.3	67	6	18	29	33	4.03	+ 0.18	1.80	T.	6	13	7	10	sw.	Agricultural Exp. Station.		
Blue Hill.....	Norfolk.....	640	28	42.1	+ 2.4	67	12	18	29	27	3.45	- 1.17	0.92	1.0	10	14	5	11	w.	Blue Hill Observatory.		
Boston.....	Suffolk.....	124	42	45.6	+ 4.4	70	12	24	29	24	2.61	- 1.49	1.06	0.3	7	13	4	13	w.	U. S. Weather Bureau.		
Chestnut Hill.....	.....do.....	124	32	43.1	+ 1.8	69	6	19	29	34	3.00	- 1.58	1.24	0.8	6	23	0	7	.....	Metropolitan Water Board.		
Clinton.....	Worcester.....	370	16	40.8	.....	67	7	20	28	33	4.26	.....	1.85	0.6	7	20	1	9	.....	Do.		
Concord.....	Middlesex.....	139	22	40.2	+ 2.0	69	12	14	29	39	3.73	+ 0.50	1.37	0.7	9	11	9	10	sw.	Fred A. Tower.		
Fall River.....	Bristol.....	200	46	44.4	+ 1.5	69	7	22	29	23	4.66	- 0.10	2.20	3.0	7	7	19	4	sw.	C. V. S. Remington.		
Fitchburg.....	Worcester.....	550	29	41.3	+ 2.9	67	12	19	19†	31	3.12	- 1.27	1.20	T.	7	18	5	7	w.	Dr. A. P. Mason.		
Framingham.....	Middlesex.....	160	32	42.8	+ 2.1	68	12	19	29	36	3.54	- 0.71	1.72	0.5	6	.....	.....	.....	.....	Metropolitan Water Board.		
Hyannis.....	Barnstable.....	31	21	45.6	+ 0.7	66	6	23	29	24	3.13	- 1.90	0.86	.....	7	13	13	4	nw.	C. F. Sleeper.		
Lawrence.....	Essex.....	51	28	40.6	+ 0.7	67	12	18	29	36	3.14	- 1.06	1.25	0.2	7	12	13	5	w.	Essex Co.		
Lowell.....	Middlesex.....	100	27	42.0	+ 2.5	66	7†	19	19	35	3.09	- 0.92	1.16	.....	6	.....	.....	.....	.....	Props. Locks and Canals.		
Middleboro.....	Plymouth.....	53	26	41.6	+ 1.3	71	12	11	29	39	4.42	- 0.16	2.03	3.0	7	10	10	10	sw.	A. R. Gurney.		
Nantucket.....	Nantucket.....	15	26	47.2	+ 2.0	65	7	29	29	19	2.94	- 0.34	1.13	T.	10	12	8	10	w.	U. S. Weather Bureau.		
New Bedford.....	Bristol.....	88	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	City Engineer.		
Norfolk.....	Norfolk.....	244	9	38.4	.....	64	7†	9	29	45	3.42	.....	1.29	1.0	7	16	6	8	w.	Ruby H. Martyn.		
Plymouth.....	Plymouth.....	.....	27	42.0	.....	74	13	17	29	25	3.70	.....	1.65	2.0	9	20	0	10	w.	Laura B. Knapp.		
Provincetown.....	Barnstable.....	40	25	45.3	+ 1.4	65	12	27	29	22	3.00	- 0.60	0.90	0	5	20	0	10	sw.	Gideon Bowley.		
Rockport.....	Essex.....	25	10	43.9	.....	69	12	23	29	25	3.90	.....	1.25	T.	8	11	10	9	nw.	C. F. P. Bearse.		
Rutland.....	Worcester.....	1,160	10	37.6	.....	64	12	16	28	28	4.32	.....	2.02	0.6	6	18	4	8	sw.	State Sanatorium.		
Turners Falls.....	Franklin.....	200	21	40.8	+ 3.6	66	7	20	19†	30	4.11	+ 1.05	0.94	T.	6	.....	.....	.....	.....	Turners Falls Co.		
Westboro.....	Worcester.....	298	38	43.8	+ 4.0	68	6†	16	29	34	3.76	- 0.38	1.60	0.5	8	.....	.....	.....	.....	G. S. Newcomb.		
Williamstown.....	Berkshire.....	711	31	39.2	+ 1.6	64	7	18	29	30	2.44	- 1.09	0.87	3.1	9	10	8	12	w.	Williams College.		
Worcester.....	Worcester.....	518	20	41.8	+ 1.2	65	12	23	19†	24	3.92	- 1.46	1.40	1.2	9	13	7	10	sw.	G. W. Swan.		
Rhode Island.																						
Block Island.....	Newport.....	26	32	47.4	+ 2.1	64	7	30	29	18	3.18	- 0.70	1.58	0.8	6	13	4	13	sw.	U. S. Weather Bureau.		
Bristol.....	Bristol.....	53	26	45.9	+ 2.1	65	12	25	29	22	3.79	- 0.18	1.50	2.0	6	18	7	5	w.	N. G. Herreshoff.		
Kingston.....	Washington.....	250	23	41.5	+ 0.4	72	12	13	29	31	4.50	- 0.58	2.05	2.0	7	16	5	9	w.	Nath		



TABLE 1.—Climatological data for November, 1912. District No. 1—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.	
New York.																					
Addison.....	Steuben.....	1,000	22	42.6	+ 3.5	72	6	16	29	36	2.64	+ 0.73	0.83	6.5	11	15	5	10	sw.	Dr. H. R. Ainsworth.	
Albany.....	Albany.....	97	91	41.6	+ 3.2	66	12	21	29	29	2.08	- 0.72	1.02	T.	7	13	5	12	s.	U. S. Weather Bureau.	
Alfred.....	Allegany.....	1,976	17	38.8	+ 3.2	67	6	13	28	34	3.60	+ 1.71	1.30		15				sw.	Jerome F. Davis.	
Amsterdam.....	Montgomery.....	277	8	39.0		68	6	13	29	37	3.73		1.85	5.0	7	17	2	11	w.	Emery Elwood.	
Athens.....	Greene.....	90	10	42.4	+ 3.1	65	6	21	29	31	2.82	+ 0.97	1.38	0	4	14	10	6	sw.	E. C. Brooks.	
Ballston Lake.....	Saratoga.....	400	8					15	29	31	2.86		0.71	3.2	8	15	2	13	w.	George R. Schaubert.	
Bedford.....	Westchester.....	450	21	43.8	+ 2.6	70	13	19	19	33	4.11	+ 0.44	2.23	T.	6	13	11	6	sw.	Dr. L. Rosenberg.	
Beerston.....	Delaware.....	1,214	0			66	11			41	2.90		0.90	8.5	7	15	1	14	w.	John Q. Barlow.	
Binghamton.....	Broome.....	875	21	41.4	+ 3.8	68	11	19	29	30	3.08	+ 0.81	1.40	13.0	8	3	11	16	w.	U. S. Weather Bureau.	
Bouckville.....	Madison.....	1,350	15	38.2	+ 3.9	68	1	11	29	32	3.94	+ 0.99	0.90	19.5	14	6	7	17	nw.	L. W. Griswold.	
Boyd's Corners.....	Putnam.....	560	30								4.61	+ 0.99							sw.	Thomas Manning.	
Carmel.....	do.....	500	20	40.7	+ 1.1	68	12	18	19	30	4.25	+ 0.74	2.33	0	7	15	6	9	sw.	Do.	
Chatham.....	Columbia.....	470	11	41.8	+ 4.7	65	6	17	29	31	2.77	+ 0.88	0.67	T.	7	11	8	11	s.	Morton R. Tank.	
Cooperstown.....	Otsego.....	1,250	58	38.4	+ 4.4	63	6	10	29	27	3.98	+ 0.94	1.68	4.5	11	15	6	9	s.	Elizabeth C. Keese.	
Corinth.....	Saratoga.....	542	10								3.81		2.10		6				sw.	A. M. Hollister.	
Cortland.....	Cortland.....	1,129	50	42.4	+ 6.2	67	6	19	28	32	3.57	+ 0.43	1.42	11.0	12	9	5	16	nw.	F. G. Baker.	
Cutogue.....	Suffolk.....	32	13	45.5	+ 2.4	68	12	23	29	29	3.89	+ 1.21	1.85	4.0	6	16	6	8	nw.	William A. Fleet.	
De Ruyter.....	Madison.....	1,300	9	40.2	+ 4.8	76	6	13	28	39	5.16	+ 2.44	1.55	21.0	13	10	5	15	s.	B. D. Crandall.	
Elmira.....	Chemung.....	863	29	42.8	+ 3.5	68	8	20	29	31	2.08	+ 0.10		7.0	5	6	9	15	sw.	Thurber A. Brown.	
Ephratah.....	Fulton.....	692	0																sw.	Victor Gennett.	
Glens Falls.....	Warren.....	340	21	39.2	+ 2.9	67	1	16	29	30	3.96	+ 0.79	2.00	1.5	8	7	10	13	n.	Prof. C. L. Williams.	
Gloversville.....	Fulton.....	850	20	37.4	+ 2.7	65	6	13	29	33	3.89	+ 0.60	1.08	6.0	9	13	7	10	w.	W. L. McLean.	
Greenfield Center.....	Saratoga.....	314	14	39.2	+ 3.4	65	12	13	29	28	2.86	+ 0.40	0.98		8	15	6	9	sw.	S. E. Darrow.	
Greenwich.....	Washington.....	425	15	40.8	+ 4.7	66	6	12	28	31	2.62	+ 0.06	1.15	T.	6	15	8	7	s.	Homer J. Whitcomb.	
Griffin Corners.....	Delaware.....	2,260	12																sw.	Harold O. Judd.	
Haskinsville.....	Steuben.....	1,096	21								2.23	- 0.29	1.18	8.0	7				sw.	W. G. Collins.	
Homer.....	Cortland.....	1,096	21																sw.	Charles C. Mortimer.	
Hoosick Falls.....	Rensselaer.....	410	10								1.57		0.81	1.5	9				w.	Sanford L. Cluett.	
Indian Lake.....	Hamilton.....	1,705	13	34.0	+ 1.4	62	6	0	29	35	4.40	+ 1.84	1.00	11.0	12	13	7	10	n.	Lester Severie, jr.	
Jeffersonville.....	Sullivan.....	1,240	9	39.0		68	6	15	29	34	2.09		0.90	2.0	7	14	11	5	w.	Charles Willett, jr.	
Liberty.....	do.....	2,300	30	37.0	+ 1.7	61	12	14	29	35	1.60	- 1.72	1.10	4.5	2	19	0	11	nw.	Dr. H. M. King.	
Little Falls.....	Herkimer.....	924	14	38.6	+ 3.4	66	6	15	29	28	2.57	- 0.18	1.05	6.0	8	11	7	12	w.	O. J. Dempster.	
Mohawk Lake.....	Ulster.....	1,245	16	42.8	+ 1.1	63	22	21	29	24	1.40	- 1.36	0.85	T.	3	15	8	7	s.	A. K. Smiley.	
Morehouseville.....	Hamilton.....	1,697	4	34.2		62	6	0	29	39	5.07		2.63	10.8	11	9	8	13	w.	T. C. Remonda.	
Morrisville.....	Madison.....	1,325	0	38.8		64	6	15	29	31					10	4	16	sw.	Prof. I. M. Charlton.		
Mount McGregor.....	Saratoga.....	1,060	0																sw.	F. W. Tooker.	
Mount Hope.....	Westchester.....	200	15	46.4	+ 5.2	71	12	22	29	27	3.77	+ 0.80	1.15	2.0	5	9	14	7	sw.	W. A. Cornelius.	
Newark Valley.....	Tioga.....	825	25								3.10	+ 0.70	1.24	9.0	9				sw.	Lyman D. Clinton.	
New Berlin.....	Chenango.....	1,090	5								3.55		1.44	11.0	11				sw.	Charles F. Searle.	
New Lisbon.....	Otsego.....	1,234	22	36.9	+ 2.7	66	6	5	29	37	3.34	+ 0.82	1.13	8.0	11	8	3	19	s.	G. A. Yates.	
New York City.....	New York.....	314	87	46.6	+ 2.6	71	12	27	29	20	2.21	- 1.23	1.09	0.8	6	12	10	8	nw.	U. S. Weather Bureau.	
North Creek.....	Warren.....	1,092	4	36.6		65	6	10	29	36	4.25		2.03	5.5	5	14	2	14	w.	W. G. Kenwell.	
Northville.....	Fulton.....	742	10								3.84		1.98		4				sw.	P. C. Pickard.	
Oneonta.....	Otsego.....	1,112	18	41.2	+ 3.0	66	6	14	29	33	3.19	+ 0.53	1.30	3.0	9	13	3	14	sw.	H. W. Lee.	
Oxford.....	Chenango.....	916	47	39.7	+ 3.8	63	6	13	29	30	4.33	+ 1.55	1.69	19.2	9	6	11	13	w.	J. P. Davis.	
Oyster Bay.....	Nassau.....	40	8	49.5		71	13	24	29	27	3.71		1.17	0.7	7	20	1	9	sw.	Prof. Thomas Colby.	
Port Jervis.....	Orange.....	470	28	41.6	+ 2.9	70	12	19	29	47	37	2.27	- 0.70	0.85	T.	7	14	10	6	nw.	Hon. W. H. Neapass.
Roslyn.....	Nassau.....	215	0	46.2		71	12	22	29	29	3.88		1.70	2.0	8	19	1	10	sw.	C. H. Hechler.	
Salisbury.....	Herkimer.....	1,526	15	35.8	+ 1.2	69	6	6	29	36	2.48	- 0.84	1.10	6.0	6	17	9	4	w.	O. J. Dempster.	
Scarsdale.....	Westchester.....	200	8	45.7		72	12	22	29	27	4.59		2.75	1.0	6	19	4	7	nw.	C. H. Hechler.	
Setauket.....	Suffolk.....	40	27	46.8	+ 2.7	68	12	28	19	22	4.15	+ 0.30	2.12	1.2	6	17	5	8	sw.	Selah B. Strong.	
Sherburne.....	Chenango.....	5	5								4.00		1.29	9.0	11				sw.	E. B. Collins.	
Southampton.....	Suffolk.....	36	11	45.8	+ 1.0	70	12	22	29	27	3.05	+ 0.42	0.85	3.5	7	13	13	4	sw.	W. L. Jagger.	
Southeast Reservoir.....	Putnam.....	310	7								3.82	+ 0.46							sw.	Thomas Manning.	
South Edmeston.....	Otsego.....	1,300	0	38.7		65	6	10	29	33	3.64		1.00	8.0	11	13	7	10	sw.	F. H. Bilderbeck.	
Spier Falls.....	Saratoga.....	400	11	37.4		66	12	14	28	32	4.86		2.37	1.0	8	6	20	4	w.	George E. Fifield.	
Trenton Falls.....	Oneida.....	751	9								3.87		1.23		8				sw.	C. W. Young.	
Tribes Hill.....	Montgomery.....	268	9								2.00		1.10	3.0	2				sw.	R. S. Marshall.	
Utica.....	Oneida.....	537	46								2.72	- 1.19	1.00		10				sw.	W. E. Young.	
Wading River.....	Suffolk.....	112	6	44.8		72	12	17	29	37	4.57		2.20	2.0	7	21	5	4	w.	H. B. Fullerton.	
Wappingers Falls.....	Dutchess.....	110	22	43.2	+ 3.4	70	12	22	19	30	3.54	+ 0.27	1.12	T.	5	16	10	4	se.	H. C. Townsend.	
Warwick.....	Orange.....	538	18								2.34	- 1.52	0.92	T.	4	17	7	6	sw.	John W. Sly.	
Waverly.....	Tioga.....	824	30	41.0	+ 2.7	72	6	11	29	42	2.62	+ 0.26	0.89	7.2	9	6	9	15	sw.	J. F. Shoemaker.	
West Berne.....	Albany.....	946	13	38.6	+ 2.8	74	12	5	29	42	1.90	- 0.64	0.75	8.0	7	6	3	21	sw.	W. F. Haverly.	
West Point.....	Orange.....	167	63	45.8	+ 3.9	74	1	25	28	30	3.03	- 0.56	1.04	T.	4	9	17	4	ne.	U. S. Military Academy.	
Windham.....	Greene.....	1,520	12	39.6	+ 3.3	65	6	11	29	40	2.74	+ 0.37	0.75	3.5	8	9	17	4	sw.	A. R. Mott.	
Pennsylvania.																					



TABLE 1.—Climatological data for November, 1912. District No. 1—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelting.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of overcast days.			
Pennsylvania—Contd.																					
Selinsgrove.....	Snyder.....	455	24	43.8	+ 2.2	68	12	21	29	38	3.76	+ 0.93	2.06	2.0	7	0	20	10	nw.	J. M. Boyer, C. E.	
State College.....	Center.....	1,191	24	43.0	+ 3.5	67	11	23	29	32	2.49	+ 0.12	1.54	0.6	8	...	...	...	w.	Prof. Wm. Frear.	
Towanda.....	Bradford.....	754	17	42.1	+ 3.1	69	13	16	29	36	2.49	+ 0.35	1.00	7.3	9	6	6	18	sw.	Hiram E. Bull, C. E.	
Wellsboro.....	Tioga.....	1,327	35	40.7	+ 3.0	68	6	13	29	43	2.15	- 0.90	0.90	6.0	9	15	12	3	w.	O. L. White.	
West Chester.....	Chester.....	455	58	46.0	+ 3.3	72	12	25	29	27	4.08	+ 0.26	2.19	0.1	6	2	21	7	sw.	J. C. Green, D. D. S.	
Williamsport.....	Lycoming.....	530	22	45.0	+ 4.7	69	6	19	29	35	2.93	+ 0.65	1.09	2.0	9	15	4	11	nw.	Henry H. Gulise.	
New Jersey.																					
Atlantic City.....	Atlantic.....	16	39	47.8	+ 2.3	75	12	22	29	26	2.86	- 0.37	1.82	4.0	4	14	6	10	nw.	U. S. Weather Bureau.	
Bayonne.....	Hudson.....	50	22	46.7	+ 3.7	70	12	25	29	24	4.20	+ 0.67	2.51	0.5	9	17	6	7	w.	Erskine R. Eadie.	
Belvidere.....	Warren.....	289	22	44.0	+ 2.8	74	12	21	29	34	2.91	+ 0.58	0.50	0	5	16	8	6	...	Samuel J. Hixson.	
Bergen Point.....	Hudson.....	37	15	46.6	+ 3.6	72	12	24	29	26	8.12	+ 4.54	3.80	1.0	7	5	20	5	nw.	Dr. Wm. H. Mitchell.	
Bridgeton.....	Cumberland.....	30	31	46.4	+ 1.5	75	12	20	29	38	2.02	- 1.24	0.90	2.0	5	18	6	6	w.	Henry A. Jorden.	
Burlington.....	Burlington.....	12	26	49.2	+ 1.8	72	12	30	28	25	3.42	- 0.32	1.30	1.1	6	24	3	3	sw.	D. S. B. McCoy.	
Cape May City.....	Cape May.....	17	34	49.2	+ 1.8	72	12	30	28	25	2.74	- 0.48	1.76	4.5	4	12	13	5	sw.	U. S. Weather Bureau.	
Charlotteburg.....	Passaic.....	719	20	43.0	+ 2.5	70	12	16	4	37	4.65	+ 0.92	1.73	T.	5	19	6	5	nw.	George S. Briggs.	
Clayton.....	Gloucester.....	126	19	46.0	+ 2.6	72	12	17	29	39	2.66	- 0.87	1.25	3.0	5	18	5	7	sw.	Wm. T. Farley.	
Culvers Lake.....	Sussex.....	848	11	41.8	+ 1.5	70	12	...	...	...	3.66	+ 0.84	1.36	T.	6	19	5	6	w.	Brice E. Riker.	
Dover.....	Morris.....	600	28	41.8	+ 1.5	70	12	19	4	31	4.88	+ 1.25	1.70	0	5	3	18	9	...	William C. Harris.	
Elizabeth.....	Union.....	45	33	45.2	+ 1.6	73	12	20	29	32	4.11	+ 0.77	2.18	1.0	9	15	9	6	nw.	L. B. Bonnett.	
Flemington.....	Hunterdon.....	140	24	45.0	+ 2.2	74	12	23	4	35	3.15	- 0.20	1.03	T.	6	18	8	4	sw.	Hiram E. Deats.	
Haddonfield.....	Camden.....	75	25	45.8	+ 3.2	73	12	19	29	32	2.41	- 0.91	0.97	1.5	6	12	14	4	sw.	Charles F. Richardson.	
Hammononton.....	Atlantic.....	103	14	44.5	+ 0.9	72	12	18	29	34	3.19	- 0.53	2.03	2.5	8	...	...	...	w.	Orville Bassett.	
Hightstown.....	Mercer.....	119	20	44.5	+ 0.9	72	12	18	29	34	2.92	- 0.74	1.30	1.0	6	18	7	5	sw.	Frank V. Jemison.	
Highwood.....	Bergen.....	90	25	44.7	+ 2.4	73	12	18	29	35	4.26	+ 0.63	2.78	1.3	6	14	8	8	sw.	Charles J. Bates.	
Imlaystown.....	Monmouth.....	107	24	46.4	+ 2.1	75	13	19	29	33	2.77	- 0.89	1.49	1.5	5	17	8	5	sw.	Dr. Fred. C. Price.	
Indian Mills.....	Burlington.....	76	23	45.2	+ 1.8	75	12	11	29	42	2.89	- 0.71	1.61	2.5	7	14	12	4	w.	James Armstrong.	
Jersey City.....	Hudson.....	10	14	47.1	+ 3.5	72	12	26	29	22	3.29	- 0.11	1.80	1.0	7	13	10	7	nw.	Samuel K. Pearson, jr.	
Lakewood.....	Ocean.....	54	10	45.4	...	72	12	21	29	33	3.09	...	2.07	1.8	5	...	...	...	nw.	Ralph Robertson.	
Lambertville.....	Hunterdon.....	95	25	45.2	+ 2.2	72	12	24	19	35	3.50	- 0.11	1.35	0.5	6	22	3	5	w.	William R. Bowne.	
Layton.....	Sussex.....	550	13	41.4	+ 3.0	72	12	17	4	40	2.39	- 0.69	0.84	0	4	24	3	3	sw.	Warren C. Hursh.	
Little Falls.....	Passaic.....	175	10	46.2	...	73	12	22	29	31	4.35	+ 0.83	1.95	0.2	6	...	...	...	w.	A. Sweetman.	
Long Branch.....	Monmouth.....	30	5	46.2	...	73	12	22	29	31	3.82	...	2.27	1.5	8	14	9	7	sw.	William D. Martin, jr.	
Mahwah.....	Bergen.....	312	10	44.4	+ 1.4	71	12	22	29	26	5.01	+ 1.67	2.23	0	5	...	...	...	...	Charles L. Barker.	
Moorestown.....	Burlington.....	75	50	44.4	+ 1.4	71	12	22	29	26	2.95	+ 0.47	1.12	1.5	6	15	11	4	sw.	George L. Gillingham.	
Newark.....	Essex.....	159	69	47.8	+ 4.9	72	12	25	29	28	4.22	+ 0.72	2.60	1.0	6	18	7	5	nw.	Prof. Wm. Wiener.	
New Brunswick.....	Middlesex.....	100	59	45.1	+ 1.5	71	12	20	29	38	4.00	+ 0.41	1.98	1.0	6	14	6	10	sw.	Harry Holcombe.	
Newton.....	Sussex.....	678	33	42.8	+ 3.0	70	12	21	29	28	2.54	- 0.40	1.14	T.	5	12	6	12	w.	F. Vernon Losee.	
Northfield.....	Atlantic.....	25	5	46.4	+ 3.1	73	12	26	4	33	3.71	+ 0.45	1.50	4.0	6	14	6	10	...	William L. Flick.	
Paterson.....	Passaic.....	80	41	46.4	+ 3.1	73	12	26	4	33	3.71	+ 0.45	1.50	0.3	6	7	19	4	sw.	Heber A. Probert.	
Phillipsburg.....	Warren.....	363	22	43.4	+ 1.8	71	12	23	29	33	3.13	+ 0.15	1.08	T.	6	17	4	9	sw.	D. W. Smith.	
Plainfield.....	Union.....	100	26	44.6	+ 2.6	72	12	19	29	34	3.52	- 0.07	1.78	0.6	7	6	14	10	sw.	John Neagle.	
Pleasantville.....	Atlantic.....	26	14	46.4	+ 2.6	72	12	19	29	34	3.52	- 0.07	1.78	0.6	7	6	14	10	sw.	Lincoln Van Gilder.	
Pompton Plains.....	Morris.....	195	10	46.4	+ 2.6	72	12	19	29	34	3.52	- 0.07	1.78	0.6	7	6	14	10	sw.	M. S. Taylor.	
Somerville.....	Somerset.....	60	29	45.2	+ 3.0	73	13	17	29	37	3.51	+ 0.12	1.39	0.3	5	18	6	6	sw.	A. A. Macdonald.	
South Orange.....	Essex.....	200	42	44.5	+ 2.9	70	12	22	29	26	3.80	+ 0.43	1.86	0.5	6	16	7	7	w.	Dr. Wm. J. Chandler.	
Sussex.....	Sussex.....	442	22	43.4	+ 2.9	74	12	19	30	32	3.00	- 0.06	1.23	0	7	12	4	14	sw.	George Dymock.	
Trenton.....	Mercer.....	63	41	46.4	+ 1.0	74	12	22	29	35	3.73	+ 0.08	1.80	1.0	6	17	9	4	sw.	James L. Bennett.	
Tuckerton.....	Ocean.....	23	18	44.7	+ 0.7	74	12	12	29	36	4.23	+ 0.77	2.47	4.0	5	11	13	6	nw.	Frank R. Austin.	
Vineland.....	Cumberland.....	63	41	45.8	+ 1.9	74	12	14	29	36	3.58	+ 0.28	1.80	3.0	7	16	11	3	nw.	Alfred Chalmers.	
Woodbine.....	Cape May.....	43	21	46.6	+ 2.6	76	12	12	29	34	2.80	- 0.35	2.25	3.0	3	...	...	...	nw.	Prof. R. D. Maltby.	
West Virginia.																					
Bayard.....	Grant.....	2,500	10	40.0	+ 2.2	66	6	12	4	42	2.86	+ 0.54	1.65	2.6	9	13	5	12	w.	Solomon Clark.	
Burlington.....	Mineral.....	875	17	44.2	+ 0.9	74	12	14	30	44	1.30	- 0.53	1.20	T.	2	11	18	1	nw.	J. W. Vandiver.	
Franklin.....	Pendleton.....	5	5	42.6	...	67	11	16	29	29	1.44	...	1.20	1.0	5	11	8	11	n.	Fred Calhoun.	
Lost City.....	Hardy.....	435	21	44.8	+ 2.1	75	12	22	4	45	1.89	- 0.28	1.50	0	4	20	7	3	w.	B. D. Hinegardner.	
Martinsburg.....	Berkeley.....	900	15	44.0	+ 1.2	74	10	16	26	39	0.82	- 0.81	0.73	T.	0	2	13	15	2	sw.	G. W. Van Metre, C. E.
Moorefield.....	Hardy.....	824	16	45.2	+ 1.7	77	12	17	29	41	0.95	- 0.72	0.95	0	1	5	16	8	w.	John C. Fisher.	
Romney.....	Hampshire.....	1,230	14	45.2	+ 1.7	77	12	17	29	41	0.95	- 0.72	0.95	0	1	5	16	8	w.	John C. Linthicum.	
Upper Tract.....	Pendleton.....	1,230	14	45.2	+ 1.7	77	12	17	29	41	0.95	- 0.72	0.95	0	1	5	16	8	w.	J. M. Mallow.	
Maryland.																					
Annapolis.....	Anne Arundel.....	45	40	50.1	+ 3.4	76	12	26	29	32	1.67	- 1.51	1.20	...	5	13	0	17	nw.	U. S. Naval Academy.	
Baltimore.....	Baltimore.....	115	42	48.6	+ 2.8	76	12	28	29	27	1.93	- 0.99	1.03	0.5	5	11	12	7	sw.	U. S. Weather Bureau.	
Cambridge.....	Dorchester.....	25	14	48.3	+ 0.6	75	13	23	29	33	2.63	- 0.01	1.33	2.0	4	15	7	7	sw.	T. E. Keenan.	
Cheltenham.....	Prince Georges.....	230	12	47.6	+ 3.0	74	13	22	29	36	1.95	- 0.47	1.40	1.0	4	18	1	11	nw.	George Hartnell.	
Chestertown.....	Kent.....	80	27	47.3	+ 1.9	74	12	22	21	43	2.36	- 0.51	2.03	0.5	4	17	8	5	nw.	M. W. Thomas.	
Cheswille.....	Washington.....	530	15	44.4	+ 1.5	73	12	21	29	37	2.17	+ 0.21	1.60	T.	5	12	17	1	nw.	D. Paul Oswald.	
Clear Spring.....	do.....	650	15	44.4	+ 2.3	74	1														



TABLE 1.—Climatological data for November, 1912. District No. 1—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Maryland—Continued.																				
Solomons.....	Calvert.....	20	21	50.0	+ 1.4	73	12†	29	29	26	1.67	- 0.52	0.86	3.0	4	7	14	9	nw.	Dr. W. H. Marsh.
State Sanatorium.....	Frederick.....	1,460	4	45.6	.....	71	13	24	29	25	2.57	.....	1.98	0.2	6	.....	.....	.....	w.	Superintendent.
Sudlersville.....	Queen Annes.....	65	13	46.7	+ 0.8	74	12	23	29	36	2.17	- 0.38	1.47	0.5	6	19	2	9	s.	Henry L. Higman.
Takoma Park.....	Montgomery.....	320	14	46.0	+ 1.3	75	13	21	29	37	1.30	- 0.70	0.88	0.9	5	2	24	4	.....	L. M. Mooers.
Towson.....	Baltimore.....	465	4	45.2 <sup>c</sup>	.....	78 <sup>c</sup>	21	24 <sup>c</sup>	4†	40 <sup>c</sup>	1.90	.....	1.19	0.2	5	12	15	2	nw.	C. W. E. Treadwell.
Van Bibber.....	Harford.....	100	15	43.7 <sup>b</sup>	- 0.3	73 <sup>b</sup>	12	22 <sup>b</sup>	27†	35 <sup>b</sup>	2.05	- 1.05	1.39	T.	4	19 <sup>d</sup>	5 <sup>d</sup>	2 <sup>d</sup>	.....	W. Benj. Ford.
Westernport.....	Allegany.....	1,000	18	46.7	+ 4.7	77	11	19	29	42	1.31	- 0.50	1.14	0.2	4	.....	.....	.....	.....	Prof. O. H. Bruce.
Westminster.....	Carroll.....	860	19	46.4 <sup>d</sup>	+ 4.5	75 <sup>d</sup>	13	20 <sup>d</sup>	30	34 <sup>d</sup>	2.01	- 1.35	1.00	.....	5	19 <sup>d</sup>	4 <sup>d</sup>	3 <sup>d</sup>	nw.	Prof. G. F. Morelock.
Woodstock.....	Baltimore.....	392	38	46.6	+ 3.8	73	12	25	29	31	2.24	- 0.74	1.25	0.2	5	18	1	11	nw.	Rev. J. F. Dawson, S. J.
Delaware.																				
Delaware City.....	Newcastle.....	10	10	47.0	.....	74	12	27	29	29	2.47	.....	1.35	0.2	4	23	3	4	nw.	H. Morton Price.
Dover.....	Kent.....	40	24	48.1	+ 4.8	75	12†	21	29	33	1.98	- 1.42	1.15	2.0	4	18	4	8	w.	W. C. Josting.
Mills.....	.....do.....	20	28	47.3	+ 1.8	74	1	17	29	34	2.84	- 0.30	1.05	6.0	7	20	8	2	sw.	Chas. J. Holzmueller.
Millsboro.....	Sussex.....	20	20	48.4	+ 1.9	78	12	16	29	40	2.95	+ 0.28	2.24	3.5	3	22	4	4	sw.	Rev. L. W. Wells.
Seaford.....	.....do.....	40	21	47.0	+ 0.8	73	1†	14	29	35	2.41	- 0.23	1.05	6.0	6	21	5	4	s.	E. B. Brown.
Wilmington.....	Newcastle.....	86	1	48.7	.....	74	12	28	29	29	3.80	+ 0.70	1.87	0.5	5	24	4	2	sw.	A. J. Taylor.
District of Columbia.																				
Washington.....	Dist. of Columbia.....	112	42	46.9	+ 1.9	77	12	25	29	36	1.54	- 1.17	1.04	0.6	5	13	8	9	nw.	U. S. Weather Bureau.
Virginia.																				
Culpeper.....	Culpeper.....	450	4	44.6	.....	73	13	17	29	37	2.05	.....	1.67	T.	3	12	17	1	s.	Col. H. C. Burrows.
Dale Enterprise.....	Rockingham.....	1,350	33	44.4	+ 0.6	74	12	15	29	38	1.69	- 0.47	1.31	1.0	5	12	14	4	s.	Rev. L. J. Heatwole.
Eastville.....	Northampton.....	15	2	50.8	+ 0.9	79	1	25	28	31	2.70	- 0.16	1.80	0.5	5	17	9	4	nw.	T. B. Robertson.
Fredericksburg.....	Spottsylvania.....	100	23	48.2	+ 1.7	80	12	19	29	39	2.31	+ 0.03	1.71	1.0	5	21	6	3	nw.	S. G. Howison.
Lincoln.....	Loudoun.....	500	11	45.2	+ 1.0	74	12	20	29†	40	1.71	- 0.17	1.10	T.	4	17	11	2	nw.	Dr. George Roberts.
Mount Weather.....	.....do.....	1,726	8	43.5	+ 3.1	69	12	23	29	21	2.49	- 0.37	2.08	0.4	5	8	14	8	nw.	U. S. Weather Bureau.
Onancock.....	Accomac.....	20	1	49.4	.....	81	1	24	19	38	2.90	.....	1.77	4.0	4	21	4	5	nw.	S. F. Rogers.
Quantico.....	Prince William.....	16	15	45.6	+ 0.2	75	11†	19	29	37	1.96	- 0.18	1.80	1.0	3	23	2	5	nw.	R. F. & P. Ry.
Staunton.....	Augusta.....	1,380	20	46.3	+ 0.9	76	1	21	3	35	2.32	+ 0.18	1.25	1.0	6	9	16	5	sw.	Ernest Nothnagel.
Warsaw.....	Richmond.....	160	20	49.2	+ 2.7	78	1†	17	29	36	4.96	+ 2.43	2.20	4.0	6	11	15	4	n.	C. H. Constable.
Winchester.....	Frederick.....	717	1	47.5	.....	74	12	23	3	32	1.50	.....	1.40	0.0	2	14	9	7	w.	Bently Kern.
Woodstock.....	Shenandoah.....	927	16	46.0	+ 2.3	76	11	18	29	41	1.68	- 2.1	1.40	T.	4	14	11	5	w.	Mrs. A. G. Artz.

<sup>a</sup>, <sup>b</sup>, <sup>c</sup>, etc., indicate respectively 1, 2, 3, etc., days missing from the record.  
 \*\*Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.  
 † Also on other dates.  
 T. Precipitation is less than 0.01 inch rain or melted snow.



TABLE 2.—Daily precipitation for November, 1912. District No. 1, North Atlantic States.

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Maine.																																	
Ashland	St. John							.72	1.86				.07		.90		.11									.11						3.77	
Bar Harbor	Coast	.95	.30	T.				T.	2.00					.03	.60	.30	T.									T.	1.50			.05		T.	5.73
Cambridge	Kennebec	.25	.41	T.				.20	2.13				T.		.78	1.17										.50						T.	5.50
Cornish	Saco	.94		T.				1.42	T.					.02	.75											.64	.05			T.			3.82
Danforth	Penobscot	.40							1.00						.64	.50										.72							3.26
Eastport	Coast	.32	.17					.10	1.59				T.	.02	.11	.03	.04	.04								.29		T.	.11		.04		2.86
Eustis	Kennebec							*	.95						*	.80											.36						2.59
Fairfield	do	.48						*	1.84					.14	.85	T.			T.							T.	1.15				.02		4.62
Farmington	do	.42	.20	T.				.01	1.46						.41	.65																	4.64
Gardiner	do	.14	.62					1.08	.83	T.			T.	.15	.52	.42	T.	.05	T.							.50					.15	.05	4.17
Greenville	do	.42						.40	.30		.10				.30													.15					0.95
Houlton	St. John							.35	.80	1.20	.40				.20	.14	.06									.30			20	.10			3.96
Howe Brook	Penobscot	.21						.83	.82						.11	.51	.13									.20	.91					T.	4.24
Lewiston	Androscoggin	.73		T.				2.46	.08						.26	.72										.79	.15				.09		5.17
Madison	Kennebec	.84						.01	2.97	.25			.04		.48	.67	.10									.70	.15				.19		6.34
Millinocket	Penobscot	.69						.10	1.60						.88											.05	.61						3.84
North Bridgton	Saco	.60						.76	.22		.10				.60		.10									.80							2.92
Orono	Penobscot		.47					1.00	2.00						.17	.61	.01		T.							.86	.39			T.			4.51
Patten	do		.01					.76	.22			T.			.61	.01			T.							.80							3.58
Portland	Coast	.56						1.00	2.00						.17	.61	.01									.86	.39			T.			3.58
Presque Isle	St. John		.36					.50					.22	T.	.18	.61	.11			.10						.60	.40						2.78
Rumford Falls	Androscoggin	.53		T.				1.13	.33						.18	.61	.11									.45	.36						3.70
The Forks	Kennebec							.33	2.02	T.	T.		.25		.10	.25	.22			.12						.23	.15	.02		T.	.21		4.38
Van Buren	St. John		.44					*	1.33							1.00										.54							3.52
Winslow	Kennebec	.65						*	1.33																	.54							3.52
New Hampshire.																																	
Alstead Center	Connecticut	.58	.01					1.22	.67					.11	.53	.10	T.		T.	T.						T.	.23						3.45
Benton	do	.37		T.				1.47	T.				.28	.17		.01	.01	T.	T.							T.	.40						2.71
Bethlehem	do	.10						.48	.74	.02				.08	.15	.38	.03	.05								.40							2.43
Brookline	Merrimack	.50						1.65						.60	.25											.85				T.			3.85
Concord	do	.51		T.				1.08	.15					.32	1.00	.03		T.	T.							.65	T.			T.			2.74
Durham	do	.64						.24						.37												1.05							3.30
Franklin	do	.79	.03					.46	.91					.12	.58	.27		T.	T.							.07	.89						4.12
Grafton	do	.75						.25	1.60					.05	.27	.25		T.								.60					T.		3.77
Hanover	Connecticut	.38		T.				1.08	.07	T.				.12	.22	.10	T.	T.	T.							.33							2.30
Keene	do	.67						.73	.56	T.				.04	.65	.04		T.	T.							.08	.35						3.12
Nashua	Merrimack	.45						1.11	.24					.02	.76	.01		T.	T.							.47				.02			3.08
Newton	do	.57						1.01						T.	.67											1.05	T.				T.		3.30
Plymouth	do	.73	.10					.31	1.22					.03	.28	.31										T.	.56	T.					3.54
Vermont.																																	
Bloomfield	Connecticut	.27	.20	.03				.37	.85	.02				.10	.41	.28	.01				.03						.23	.04				.09	2.93
Cavendish	do	.51						.40	.87					.12	.24	.12		.05	.03							.08	.30						2.69
Chelsea	do	.15						1.23						.30	.28			T.	.02							.87							2.85
Manchester	Hudson	.20						.16	.23					.26	.36		T.	.10								T.	.38						2.69
Somerset	Connecticut	.20	T.					.63	.58	.19			T.	.14	.81	.06	.01	T.	.10								.90				T.		3.62
St. Johnsbury	do	.09	.07					.38	1.18	.02				.16	.27	.25	T.	.02	T.								T.	.30				.04	2.78
Vernon	do	.53						1.42		.02				.54	.32	.25											.35						3.18
Woodstock	do							1.97						*	.54		.19									.44							3.14
Massachusetts.																																	
Amherst	Connecticut	.48		T.				1.80	.22					.45	.58	T.			T.							.50	T.			T.			4.03
Ashland	Merrimack	.48						*	1.65						.64												.49			.06			3.32
Bakers Bridge	do							1.35							.55	.15										.16	.60			.10			2.91
Bedford	do	.55						1.21	.33	T.				.04	.69	T.		T.								.11	.14			.07			3.14
Blue Hill	Coast	.64	.16					.92	.71	T.					.02	.46	.02										.36	.07			.09		3.45
Boston	do	.62						.76	.30	T.				.08	.41											.42	T.			.02			2.61
Chestnut Hill	do	.56						1.24						.43	.11											.45	T.			.21			3.00
Clinton	Merrimack	1.04						*	1.85					*	.76											.51	T.			.10			4.26
Concord	do	.53	.07					.80	.57					T.	.75	.12			T.							.16	.67			.06			3.73
Fall River	Coast	1.72						1.00	1.20					.01	.20											.30				.23			4.66
Fitchburg	Merrimack	.43						1.20	.33	T.				.03	.59	T.										.30	.24						3.12
Frammingham	do	.53						*	1.72						.66											.57	.01			.05			3.54
Haverhill	do	.28	.09					T.	.83						.52	.07										.14	.81			T.			2.74
Hingham	Coast	.98						1.60		T.					.31											*	.62			.17			3.68
Hyannis	do	.86						*	.62						.25											.62	.22						3.13
Jefferson	Merrimack	.95						1.76						*	.70											.73				.05			4.19
Lake Cochituate	do	.54						1.58							.69											.34				.09			3.24
Lawrence	do	.62						*	1.25	T.					.01	.60										.63	T.			.03			3.14
Leominster	do	.51						1.58	.21						.09	.76	.09									.63	.09			.04			4.00
Lowell	do	.67						*	1.16						.74											.46				.06			3.09
Middleboro	Coast	1.43						.75	1.28					.08	.14											.40				.34			4.42
Nantucket	do	.77	.20					.13	.09	.04				T.	.16											.34	.08			1.12	.01		2.94
New Bedford	do							*	1.29					T.	.46									</									



TABLE 2.—Daily precipitation for November, 1912. District No. 1—Continued.

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Rhode Island—Con.																																	
Narragansett Pier.	Coast.	1.33	.12					.77	1.08					.03	.29	.02			T.						.24	T.			.30			4.18	
Pawtucket.	do.	1.00						* 1.28						* .41	.41										* .30				.11			3.10	
Providence.	do.	.81						.93	.23					.04	.24				T.						.27	.01			.28			2.81	
Wallow Lake.	do.	.75						2.30						.33	.30										.54	T.			.10			4.32	
Connecticut.																																	
Bridgeport.	Coast.	.66						1.58	.40	T.					.24										.32	T.			.10			3.30	
Canton.	Connecticut.	.93						2.20		T.					1.02										.48	.03						4.66	
Colchester.	Coast.	.70						* 2.47	T.					T.	.42										.39				.30			4.28	
Cream Hill.	Housatonic.	.66						1.60						T.	.47	.21		T.							.49	.58			.05			4.06	
Danielson.	Coast.	1.00						2.21							.57										.45				.20			4.43	
Falls Village.	Housatonic.	.50						1.40	.34	T.				.35	.38			.02							.55	.15						3.69	
Hartford.	Connecticut.	.77						1.52	.09					.05	.84				T.						.19	.01			.06			3.53	
Hawleyville.	Housatonic.	.60	.22					1.70	.75		.02				.30					T.					.30		.04					3.93	
Lake Konomoc.	Coast.	1.00						2.10							.40						.10								.35			3.95	
New Haven.	do.	.55					T.	2.01	.04	T.				T.	.42										.18	T.			.17			3.37	
New London.	do.	.29						* 1.32							.35										.32				.19			2.47	
North Grosvenor Dale.	do.	.60						2.00						.37	.08										.41	.02			.10			3.58	
Norwalk.	do.	1.65						2.18							.34										.23	T.			.06			4.46	
Southington.	do.	1.00	.20					1.75	.50						.40	T.									.10	.05			.05			4.05	
South Manchester.	Connecticut.	.64						1.57						.85											.51	T.			.10			3.67	
Storrs.	Coast.	.70						* 2.10							.48										.43	T.			.10			3.81	
Torrington.	Housatonic.	.70		.58				.05	2.02		T.				.48	.12			T.									.09		.02		3.86	
Voluntown.	Coast.	* .76						* 1.78						* .	* .32										* .50				.10			3.46	
Wallingford.	do.	1.04						10.2	1.17		T.			.36	.19										.11				.13			4.10	
Waterbury.	Housatonic.	.79						1.10	1.01	.04				.62												* .38			.03			3.97	
West Simsbury.	Connecticut.	.80						2.04		T.				* .	.84										* .52				.02			4.22	
New York.																																	
Addison.	Susquehanna.	.06	.09	T.				.72	.34	.01		T.		.14	.10			T.	.06	.14					.83	.15						2.64	
Albany.	Hudson.	.02						.86	.16	T.			T.	.10	.13	T.			T.	T.					.67	.14						2.08	
Alfred   .	Susquehanna.	.02	.28	.02				.63	1.30	.03	.01			T.	.07	.03	.04		.01	.11	.01				.14	.90						3.60	
Amsterdam.	Mohawk.	.12						1.00	.48	T.				.18	.10										.50	1.35						3.73	
Athens.	Hudson.	.34						1.38							.30				T.							.80						2.82	
Bainbridge   .	Susquehanna.	.45						1.24	.03	.11				.18		.10									.40	1.25						3.76	
Ballston Lake.	Hudson.	.06						.71	.53	T.				.07	.44	.04		T.	T.						.30	.71				T.		2.86	
Bedford.	Coast.	.74						2.23	.13					.02	.39										.60				T.			4.11	
Beerston.	Delaware.	.47						.90	.49	.07				.20					T.						.67	.10						2.90	
Binghamton.	Susquehanna.	.09	T.	T.				1.38	.02	T.	T.			.10	.01	.01	T.	T.	T.						1.29	.18			T.			3.08	
Bouckville.	do.	.15	.03	T.				.72	.28	.08				.10	.58	.05	.15	.10	.10						.90	.60		.10				3.94	
Carmel   .	Hudson.	.88						2.33							.48									.02	.54							4.25	
Chatham.	do.	.28						.66	.42						.23	.11	T.								.40	.67						2.77	
Cooperstown.	Susquehanna.	.28	.10					1.68	.12	.12			.10	.15	.15	.10		.08							1.10							3.98	
Corinth   .	Hudson.							.28	2.10					.10	.30	.27										.76						3.81	
Cortland.	Susquehanna.	.08	T.	T.				.50	.48	.17	.10			.19	.47	.07	.04	.05	T.							* 1.42						3.57	
Cutchogue.	Coast.	1.07	T.					1.29	.56						.32										.25				.40			3.89	
De Ruyter.	Susquehanna.	.15	T.	T.				.78	.40	.13	.10		T.	.09	.67	.02	.05	.50	.17						1.55	.55						5.16	
Elmira   .	do.	.05		T.				.73						.10	T.	T.		T.							* 1.20							2.08	
Ephratah.	Mohawk.							2.00	.36	T.				.18	.40	.06		T.								.62						3.96	
Glens Falls.	Hudson.	.34						.82	1.00	.04				.02	.42			.03								.16	1.08	T.	T.				3.89
Gloversville.	Mohawk.	.32						.77	.98	.04				.20	.35	.05										.35						2.86	
Greene.	Susquehanna.							1.15	.47					.12	.38	.15									.35							2.62	
Greenfield Center.	do.	.12						.07	1.12		.11			.05	.15										.12	1.20						3.23	
Griffin Corners.	Delaware.		.41					1.18	.05	.15				.05	T.	T.			.10						* .70							2.13	
Hancock   .	Susquehanna.	T.		T.				.02	.81	.04	.05			.06	.32											.08	.12					1.57	
Haskinville.	do.	.90	.08			.05		1.00	.80	.07				.07	.17	.60		.06								.05	.80				.02	4.60	
Homer.	do.	.23	T.	T.				.68		.01	.09			.06	T.				T.							.90	.12					2.69	
Hoosick Falls   .	Mohawk.	T.		T.				1.10						T.	.06	.06	T.		.04							.50	T.					1.60	
Indian Lake.	Hudson.	.85						1.05	.51	.11			T.	.06	.06	T.		.04								.14	.60					2.57	
Jeffersonville.	do.	.58						1.25						.36										T.		.58	T.					2.19	
Liberty.	Mohawk.	.58			.01			.50						.50												.05	T.					1.40	
Little Falls.	Susquehanna.							2.63	.64	.14				.14	.44	.04		.05								.05	.35					5.07	
Mechanicsville   .	Coast.	1.12						1.15							.97									.33					.20			3.77	
Mohawk Lake.	Hudson.	.19	T.	T.				1.24	.08	.10				.10	.04	.03	T.	T.							1.09	.23						3.10	
Morehouseville.	Susquehanna.	.18		.18	T.			.30	1.12	.04	.05			.07	.12	.18	T.	T.															



TABLE 2.—Daily precipitation for November, 1912. District No. 1—Continued.

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Pennsylvania.																																	
Altoona.....	Susquehanna.....	.30						1.30		.11				.08	.23											.21	.09				.02	2.34	
Ansonia    .....	do.....	T.	T.	.14	T.			.28	.83	.15	T.	T.			.10	T.	T.								.17	.49	T.				T.	2.16	
Austin.....	do.....	.35	T.	T.				.33		.19	.03			.02	T.	T.		T.														1.66	
Bethlehem.....	do.....	.32						.65			.13			.54											.74	.83						2.47	
Bloersville.....	do.....	.10						.03	1.96	.05	.02			.05	.04											.10	T.					2.35	
Browers Lock.....	Schuylkill.....	.08						2.20		.03		.04			.70											.81						3.86	
Catawissa.....	Susquehanna.....	.18						1.32		.02	.01			.17						T.	T.					1.01	.01					2.72	
Center Hall.....	do.....	.17						1.46	.45					.30	.02					T.						.18	.20					2.90	
Coatesville.....	Coast.....	.50						1.29							.41											.61				.01		2.82	
Doylestown.....	Schuylkill.....		.57					1.66				.07														1.60						3.90	
Drifton.....	Susquehanna.....	.42	T.	T.				1.20	.02	T.				T.		T.			T.							1.20	.30					3.32	
Emporium.....	do.....	.28	T.		T.		.02	.60	.14	.14	.08			.21	.02				T.							.19	.10					1.78	
Ephrata.....	do.....	.24		T.			T.	1.02		.02	T.				.48											.52						2.28	
Everett.....	Juniata.....	.12	T.	T.				1.35	.12	.05				.22																		1.86	
Forks of Neshaminy.....	Delaware.....	.83						1.68			.04			.38												.93					.06	3.86	
George School.....	do.....	.44		T.		T.		1.71	.05		.05			.39		.01										.20						2.91	
Gettysburg.....	Potomac.....	.26					T.	1.25	.06	.01				.02	.13											.18						1.91	
Girardville.....	Susquehanna.....	.40						1.22	.31	.04	.07			.24												1.07	.14					3.49	
Gordon.....	do.....	.45		T.				1.40	.16	.02		.05		.20	.11					T.						.80	.21					3.40	
Hamburg.....	Schuylkill.....									.57			.77													2.00						3.34	
Hanover.....	Susquehanna.....	.20						.69	.50						.19											.47						2.05	
Harrisburg.....	do.....	.15	T.	T.			T.	.65		T.	T.			.10	T.	T.			T.	T.						.65	T.					1.55	
Huntingdon.....	Juniata.....	.10						1.16	.11	T.	.05			.25	T.												.18					1.85	
Hyndman.....	Potomac.....							1.41						.19																		1.60	
Kennett Square.....	Coast.....	.75						2.00						.49												.39						3.63	
Lancaster.....	Susquehanna.....	.14	T.					.80			.01				.47											.62						T.	2.04
Lansdale.....	Schuylkill.....	.69						1.73							.57												.57	.33					3.89
Lawrenceville.....	Susquehanna.....	.10	T.					1.00	.10	T.				.14	T.					T.						1.20	.10					2.64	
Le Roy.....	do.....	.25	.01	T.				1.18	.23	.05		.02		.18	.01	.01				.01	.01						.73	.45				3.14	
Lewisburg.....	do.....	.30	.01	T.				2.12	.01		.05			.14													.47	.05					3.17
Lloyd.....	do.....	.23	.05	.02				1.20	.15	.03	.01			.15	.01	T.	T.		T.								.40	.24					2.49
Lock Haven.....	do.....	.19	T.					1.61	.01			.06	.04	.21													.42	.01					2.55
Marion.....	Potomac.....	.15						1.54	.05	T.				.11													.16						2.01
Mauch Chunk.....	Lehigh.....	.73						1.68	.16		.08			.16													1.32	.06					4.19
Millintown.....	Juniata.....	.16	T.					1.57	.07	.02				.15	.03												.13	.05					2.18
Millford.....	Delaware.....	.75	T.					.82	.03		.03			.20													.70	.02					2.58
Montrose.....	Susquehanna.....	.32		T.				1.20	.32	.02		.03		.35	T.					T.	T.					.75	.10					3.06	
Mountain House.....	Juniata.....	.12						1.07						.18	.04																		1.41
Mount Gretna.....	Susquehanna.....	.50	T.				T.	1.24	.10	.02	.02	T.		.11	.18					T.												2.87	
New Germantown.....	do.....							2.00						T.	T.	.27										2.00							4.27
Ottsville.....	Delaware.....	.88						1.73	.02		T.	.08			.28												1.22						4.21
Philadelphia.....	do.....	.56		T.				1.70	T.	.01	T.				.47												.38	T.			.07		3.21
Pocono Lake.....	do.....	.42								T.				T.													.60						1.02
Point Pleasant.....	do.....	.83						1.56							.37												1.07						3.83
Pottsville.....	Schuylkill.....	.53						1.20	.03		.03			.13													.81	.07					2.80
Reading.....	do.....	.30		T.				1.20	T.	.03				.43	.04												.80	T.					2.80
Renovo    .....	Susquehanna.....		.12					.70	.60					.23													.45	.10					2.20
Scranton.....	do.....	.29						.82	.01	.01	.03			.10		T.			.02	T.							1.90	.57					3.75
Seisholtzville.....	Schuylkill.....	.47						1.26			.02			.52													.99						3.26
Selinsgrove.....	Susquehanna.....	.30	.01					2.06	.21		.15			.13													.90	T.					3.76
Shawmont.....	Schuylkill.....	.58						2.90							.45													.90					4.83
Shippensburg    .....	Susquehanna.....	.16						.60	.47						.10												.19						1.52
Smiths Corners.....	Schuylkill.....	.82						1.42							.43												1.28						3.95
Spring Mount.....	do.....	.64						1.43			.04			.33													.85						3.29
State College.....	Susquehanna.....	.23	T.	T.			T.	1.54	T.	.06	.01			.32	T.	T.		.04	T.								.26	.03					2.49
Stroudsburg.....	Delaware.....	.61						.96	.13		.01	.09			.27												1.23	.04					3.34
Towanda.....	Susquehanna.....	.17	.03	T.				1.00	.10	.03				.10	T.	T.	T.	T.	.05								.70	.31					2.49
Weikert.....	do.....	.35						1.75	.15		.11			.20													.22	.12					2.90
Wellsboro.....	do.....	.12	T.					.90	.20	.13		.08		.10	.05	T.											.30	.27					



TABLE 2.—Daily precipitation for November, 1912. District No. 1—Continued.

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
New Jersey—Con.																																	
Somerville.....	Coast.....	.73						1.39							.37										.99				.03			3.51	
South Orange.....	do.....	.80						1.86			.02				.42			T.							.65	T.			.05			3.80	
Sussex.....	Hudson.....	.55						1.23		.01		.04			.39										.78							3.00	
Trenton.....	Delaware.....	1.02						1.80				.05			.34			T.							.42	T.			.10			3.73	
Tuckerton.....	Coast.....	.80						2.47							.24										.22				.50			4.23	
Vineland.....	do.....	.90						1.80	.26						.16										.11	.02			.33			3.58	
Woodbine.....	do.....	.25						2.25																				.30				2.80	
West Virginia.																																	
Bayard.....	Potomac.....	.65	T.			T.		1.65	.07	.09				.08	.10	.03									.08	.11				T.		2.86	
Burlington.....	do.....							1.20						.10											T.							1.30	
Harpers Ferry II.....	do.....	T.	.20					.20	2.10																							2.50	
Lost City.....	do.....	.10						1.20		.04				T.											*	.10			T.			1.44	
Martinsburg.....	do.....	.18						1.50	T.					.08											.13							1.89	
Moorefield.....	do.....	T.					.73					.09		T.										T.	T.			T.	T.			.82	
Upper Tract.....	do.....	T.					.95			T.				T.		T.										T.						.95	
Maryland.																																	
Annapolis.....	Coast.....	.37	T.					1.20		.01					.08										.01			T.	T.			1.67	
Baltimore.....	do.....	.37						1.03	T.					T.	.14										.34				.05			1.93	
Cambridge.....	do.....	.87						1.33							.23														.20			2.63	
Cheltenham.....	do.....	.42						1.40	.03																				.10			1.95	
Chestertown.....	do.....	.23						2.03																	.05				T.	.05		2.36	
Chesville.....	Potomac.....	.22						1.60	.06	T.				.15		T.									.14							2.17	
Clear Spring.....	do.....	.03	.04					.60	1.27	.03					.10										.15							2.22	
Coleman.....	do.....							2.01							.09														.10			2.70	
College Park.....	do.....	.22						.86	.02	T.					.04										.08				.10			1.32	
Cumberland.....	do.....	T.	T.					1.68	.03	.04	T.			.02	.03	T.									.03	T.			T.			1.83	
Darlington.....	Coast.....	.40						1.51	.03	T.					.27										.15				.03			2.39	
Denton.....	do.....						.81							.24											.05				.35			1.45	
Easton.....	do.....	.49					.98																					.27				1.74	
Emmitsburg.....	Potomac.....	1.50								.75																							2.25
Fallston.....	Coast.....	.49						1.26	.02	T.					.16										.20				.06			2.19	
Frederick.....	Potomac.....	.16		T.				1.11	.01	.02					.48										.06				.01			1.85	
Frostburg.....	do.....	.07						1.24		.11				.17	.04	T.											.08		T.			1.71	
Great Falls.....	do.....								.28																.30				.10			0.68	
Green Spg Furnace.....	do.....	.15						1.93							.06										.13							2.27	
Keedysville.....	do.....	.19						T.	1.63		.02				.16										.11				T.			2.11	
Lake Montebello.....	Coast.....	.48						T.	1.29	.01	.01				T.	.06	T.								.30				.05			2.20	
La Plata.....	do.....							.98							.05														.10			1.73	
Laurel.....	do.....	.40						1.10							.25										T.				.15			2.01	
Leonardtown.....	do.....	.51																															
Monrovia.....	Potomac.....	.18						T.	.78	.02	.02				.42										.14				.04			1.60	
Pocomoke City.....	Coast.....	*	.34					2.56							.35														.41			3.66	
Porto Bello.....	do.....																																
Princess Anne.....	do.....	.39						1.83							.29														.50			3.01	
Rockville.....	Potomac.....																																
Salisbury.....	Coast.....	.03	T.					2.00	.02						.25												.05			.80			3.15
Solomons.....	do.....	.86						.27		T.					.22														.32			1.67	
State Sanatorium.....	Potomac.....	.30		T.				T.	1.98						.01	.11	T.								.15				.02			2.57	
Sudlersville.....	Coast.....	.35						1.47	.02	T.		T.			.17										.06				.10			2.17	
Takoma Park.....	do.....	T.	.17					.06	.88						T.										.10				.09			1.30	
Towson.....	do.....	.30						*	1.19						.12										.25				.04			1.90	
Van Bibber.....	do.....	.45						1.39																	.13				.08			2.05	
Westernport.....	Potomac.....	.03						1.14						.12											T.		.02		T.			1.31	
Westminster.....	Coast.....	.20						1.00	.06						.28										.47							2.01	
Woodstock.....	do.....	.32						T.	1.25						.35											.29			.03			2.24	
Delaware.																																	
Delaware City.....	Coast.....	.72						1.35		T.					T.										.38				.02			2.47	
Dover.....	do.....	.49						1.15							.14														.20			1.98	
Millford.....	do.....	.39	.35					1.05	.07					.26															.70			2.84	
Millsboro.....	do.....	.36						2.24																					.35			2.95	
Seaford.....	do.....	.05	.55					1.05	.07	T.					.16														.53			2.41	
Wilmington.....	do.....	.88	T.					1.87							.32										.68				.05			3.80	
District of Columbia.																																	
Washington.....	Coast.....	.25						1.04	T.					T.	.03										.12				.10			1.54	
Virginia.																																	
Culpeper.....	Rappahannock.....	.29						1.67						.09																		2.05	
Dale Enterprise.....	Shenandoah.....	.08					.02	1.31		T.				.18		T.										T.			.10			1.69	
Eastville.....	Coast.....	T.	.50					1.80	.05						.24											T.			.11			2.70	
Fredericksburg.....	Rappahannock.....	.31						1.71	.06						.07														.16			2.31	
Lincoln.....	Potomac.....	.18						1.10						.40											.03				T.			1.71	
Mount Weather.....	do.....	.18						2.08						.17												.02			.04			2.49	
Onancock.....	Coast.....	.45						1.77							.37											T.			.37			2.90	
Quantico.....	Potomac.....	.06						1.80							T.														.10			1.96	
Staunton.....	Shenandoah.....	.10					*	1.74	.03					.32												T.			.13	T.		2.32	
Warsaw.....	Rappahannock.....	.16		.20				1.55							.45			2.20											.40		</		



TABLE 3.—Maximum and minimum temperatures for November, 1912. District No. 1, North Atlantic States.

Date.	Maine.												Concord, N. H.		Massachusetts.								Provi- dence, R. I.		Connecticut.			
	Eastport.		Greenville.		Orono.		Portland.		Presque Isle.		Rumford Falls.				Amherst.		Boston.		Middle- boro.		Nantucket.				Cream Hill.		Hartford.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1....	54	34	43	26	55	23	59	36	39	22	43	30	59	31	62	34	65	44	64	33	63	44	65	37	56	40	64	38
2....	56	31	46	28	60	35	56	31	48	32	45	32	47	29	45	32	52	33	64	39	58	42	51	33	42	30	48	33
3....	33	27	30	23	53	22	36	26	35	18	33	24	34	23	39	21	39	30	41	22	42	35	38	26	36	20	39	28
4....	45	27	43	20	47	20	48	25	43	19	43	20	52	17	51	20	53	29	49	14	51	32	51	26	46	22	51	26
5....	54	45	51	25	55	33	61	40	50	32	46	30	60	35	64	40	65	47	62	39	61	51	64	48	54	40	65	43
6....	55	44	58	33	59	30	58	42	54	36	52	31	66	32	67	34	69	50	66	38	63	51	65	48	62	40	65	48
7....	60	52	57	44	61	47	58	51	52	36	60	39	66	54	66	56	70	60	67	54	65	55	66	56	61	45	68	56
8....	57	38	57	36	62	42	58	39	52	36	59	40	64	39	62	39	67	43	65	48	63	46	63	41	48	38	65	43
9....	48	36	41	30	56	34	50	37	50	30	42	32	49	32	48	31	54	40	54	30	54	43	53	36	52	33	52	41
10....	37	31	32	25	55	30	44	32	40	22	38	32	44	31	48	28	48	35	45	30	45	40	47	32	45	32	48	36
11....	44	31	41	29	48	28	48	36	42	27	48	33	54	32	58	30	62	40	61	24	59	40	64	34	61	34	64	37
12....	54	37	48	32	55	34	58	39	41	33	55	34	68	36	65	40	70	48	71	38	63	51	69	48	69	46	70	50
13....	38	34	40	28	56	29	46	35	35	29	39	33	48	36	57	42	52	44	62	45	55	48	60	45	67	46	59	43
14....	40	35	32	27	55	30	36	33	32	27	36	32	39	35	43	36	47	38	50	41	57	50	47	38	60	53	46	40
15....	42	33	30	24	51	31	41	32	32	24	38	29	42	32	46	32	51	36	50	37	50	41	49	36	53	30	48	37
16....	33	24	28	21	49	26	35	28	28	22	32	24	34	26	41	26	40	33	43	29	42	35	40	31	40	24	39	32
17....	39	21	26	10	40	17	36	24	27	2	32	18	43	21	43	24	43	30	42	16	49	33	42	28	39	21	44	27
18....	36	28	29	23	40	28	37	28	28	22	34	29	35	27	37	24	39	31	39	25	41	33	37	28	35	20	37	30
19....	34	27	34	21	35	23	37	23	30	22	36	26	43	22	44	20	47	26	45	13	50	31	46	23	41	18	46	25
20....	44	32	42	27	48	23	53	32	35	22	47	28	54	26	57	30	58	40	59	28	57	44	58	39	49	33	57	36
21....	53	37	47	29	53	28	58	34	45	28	44	27	64	27	62	29	68	45	63	24	60	43	65	38	56	34	65	37
22....	53	42	48	32	53	36	60	44	46	28	50	32	58	33	58	39	62	51	59	40	59	51	62	47	62	40	63	48
23....	49	36	42	29	53	28	48	37	44	28	47	30	50	32	52	30	52	42	54	24	51	46	54	38	55	32	53	37
24....	41	36	34	25	52	29	42	32	35	24	38	30	42	32	44	37	50	39	47	30	51	46	51	35	39	34	48	40
25....	45	34	33	27	49	32	43	32	35	30	36	30	45	33	38	33	45	36	47	35	46	38	40	36	36	30	40	33
26....	36	30	30	22	47	27	40	32	29	19	37	29	40	33	41	33	47	38	44	32	46	38	43	37	37	29	42	34
27....	44	35	35	22	41	29	42	28	35	24	38	23	42	26	42	27	48	36	46	28	48	39	46	35	36	25	43	34
28....	35	27	27	15	42	20	32	24	27	15	31	20	33	23	33	26	38	26	35	22	41	32	35	26	35	24	34	27
29....	37	22	27	13	36	19	37	20	29	13	31	19	39	20	38	18	42	24	38	11	47	29	39	22	32	15	40	22
30....	41	25	33	21	42	21	43	28	35	15	38	24	44	27	44	30	48	35	46	31	49	38	46	32	43	22	48	34
Mns..	44.6	33.1	38.8	25.6	50.3	28.5	46.0	32.7	38.4	24.4	41.6	28.7	48.6	30.1	49.8	31.4	53.0	38.3	52.6	30.7	52.9	41.5	51.9	36.0	48.2	31.7	51.7	36.5

Date.	New Haven, Conn.		New York.														Pennsylvania.														Atlantic City, N. J.	
			Addison.		Albany.		Bingham- ton.		Indian Lake.		Little Falls.		New York.		Everett.		Harris- burg.		Philadel- phia.		Scranton.		State College.		Wellsboro.							
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.				
1....	64	42	63	43	61	43	61	40	49	28	60	38	65	50	63	32	62	46	67	49	62	44	61	42	64	40	65	51				
2....	51	32	49	29	44	31	40	27	53	22	44	24	50	35	47	34	46	38	50	39	44	29	43	32	50	29	51	38				
3....	42	29	40	24	39	27	35	26	30	18	32	26	44	31	42	17	44	34	46	35	38	28	39	30	37	26	45	31				
4....	51	26	56	22	50	27	52	29	47	13	51	24	52	35	55	25	52	30	54	35	55	27	49	24	51	20	55	34				
5....	62	45	67	34	60	42	61	42	49	33	57	42	61	42	69	53	66	39	64	44	62	40	64	40	62	32	62	50				
6....	64	45	72	41	64	44	67	49	62	27	66	43	66	50	68	34	65	43	68	49	68	43	66	40	68	39	62	57				
7....	65	59	61	53	64	51	62	43	69	46	63	52	64	58	62	53	63	53	66	60	65	46	61	50	63	52	64	59				
8....	61	46	55	38	51	40	51	40	55	33	55	34	62	47	58	40	56	46	60	48	53	42	56	39	55	37	60	49				
9....	53	40	52	34	48	39	45	36	37	30	40	34	52	41	52	35	50	41	53	43	46	40	47	36	50	35	53	40				
10....	50	36	57	31	47	35	50	36	40	23	44	34	53	39	53	35	53	41	55	41	50	37	51	35	54	30	55	38				
11....	63	42	70	37	58	34	68	44	49	21	55	33	64	45	60	38	67	44	64	47	65	45	67	39	66	34	62	52				
12....	72	49	70	41	66	46	65	51	56	41	58	48	71	53	73	40	71	48	74	49	67	49	64	56	66	45	75	53				
13....	56	45	63	45	50	40	66	50	50	41	50	36	62	50	70	42	66	49	69	54	67	49	63	49	63	44	63	56				
14....	49	42	60	36	50	40	56	37	45	34	58	36	57	46	66	41	55	43	57	44	57	39	56	37	55	39	61	42				
15....	50	35	46	29	48	37	41	32	40	27	58	32	48	38	41	35	45	40	50	41	44	35	41	34	42	28	48	38				
16....	40	33	57	31	38	30	34	30	30	20	33	26	44	35	40	30	46	37	48	38	36	30	42	32	45	29	51	35				
17....	46	29	40	34	45	29	39	31	29	15	39	29	47	33	45	29	45	36	50	35	41	29	40	33	40	26	52	35				
18....	39	30	38	28	37	28	33	29	30	20	32	20	40	33	40	35	42	33	43	36	36	30	39	32	39	28	43	31				
19....	48	25	56	20	44	25	50	26	40	12	50	27	49	31	50	36	52	30	54	32	49	26	57	25	52	19	55	29				
20....	59	36	62	29	55	32	56	30	45	30	48	33	59	42	59	30	62	40	63	43	60	33	61	30	59	29	64	44				
21....	64	41	65	45	61	32	66	36	57	22	63	35	65	45	70	21	66	40	68	44	66	36	66	45	64	30	61	48				
22....	64	48	60	33	54	37	55	39	55	37	54	37	61	49	62	39	62	47	64	48	59	46	57	46	57	32	58	48				
23....	57	39	56	25	48	33	49	32	47	26	41	31	54	44	55	27	52	37	57	45	52	32	50	33	52	24	52	43				
24....	51	37	46	34	47	33	43	32	41	25	38	31	53	35	50	28	43	33	53	35	43	31	47	34	49	31	56	37				
25....	41	36	34	31	37	33	33	31	33	24	34	27	42	34	49	30	42	33	46	34	37	30	35	27	36	29	45	35				
26....	43	35	39	30	42	34	37	32	30	25	34	28	43	37	48	25	44	35	46	37	42	33	41	28	37	27	47	34				
27....	41	32	38	22	43	31	36	27	30	26	34	28	44	33	41	28	42	32	49	35	40	30	37	29	39	21	48	33				
28....	35	28	37	18	36	24	31	20	31	15	30	16	38	29	40	20	38	29	40	32	33	26	32	25	34	18	40	24				
29....	41	24	42	16	39	21	40	19	29	0	34	15	40	27	38	16	44	27	43	29	42	23	45	23	41	13	42	22				
30....	48	34	46	26	45	35	40	24	34	25	36	28	49	32	42	20	51	33	53	35	44	30	46	32	45	26	53	33				
Mns..	52.3	37.3	53.2	32.1	49.0	34.3	48.7	34.0	42.7	25.3	45.7	31.6	53.3	40.0	53.6	32.5	53.1	38.6	55.8	41.2	50.8	35.3	50.8	35.2	51.1	30.3	54.9	40.6				



TABLE 3.—Maximum and minimum temperatures for November, 1912. District No. 1—Continued.

Date.	New Jersey.								Martinsburg, W. Va. §§	Maryland.								Millsboro, Del.		Washing- ton, D. C.		Virginia.						
	Bridgeton.		Phillips- burg.		Sussex.		Trenton.			Baltimore.		Darling- ton.		Frederick.		Western- port.						Fredericks- burg.		Staun- ton. §§		Wood- stock.		
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.			
1....	69	42	64	44	64	37	68	45	67	41	66	48	63	44	63	39	67	38	75	42	66	47	70	46	76	44	71	39
2....	60	40	47	31	61	36	62	39	47	36	48	39	60	37	52	35	48	35	71	44	48	35	65	40	46	38	72	36
3....	48	28	45	26	41	22	49	27	46	32	48	36	45	29	48	31	57	30	49	33	46	30	49	31	49	21	54	25
4....	57	26	54	24	52	22	56	27	55	22	56	32	63	25	55	22	55	21	60	25	55	27	57	24	56	25	59	23
5....	56	38	64	34	63	34	67	35	68	23	65	43	65	35	68	36	73	31	70	40	66	40	70	36	67	39	70	31
6....	72	42	69	39	67	38	69	39	69	39	66	46	64	40	71	38	72	39	75	48	70	44	72	42	62	43	65	38
7....	65	56	63	55	64	53	65	55	61	50	64	59	63	53	65	56	64	55	70	66	66	57	67	58	62	56	63	54
8....	64	47	57	42	63	44	65	47	60	44	59	49	63	44	60	45	66	42	67	50	61	48	65	43	61	40	68	38
9....	53	41	50	35	48	39	53	40	49	42	53	45	50	36	53	41	57	34	54	42	54	43	60	40	48	43	57	42
10....	67	36	54	36	54	36	57	35	56	38	54	40	54	34	54	39	69	37	58	38	56	40	58	32	60	31	62	32
11....	66	42	65	40	65	39	66	42	73	38	68	44	64	40	72	38	77	37	74	45	74	41	76	41	73	50	76	36
12....	75	41	71	41	74	46	74	43	75	40	76	49	73	45	75	43	74	39	78	43	77	43	80	42	74	49	75	39
13....	71	41	65	46	63	46	73	45	69	44	69	50	65	41	65	44	72	47	74	42	72	45	76	51	70	52	73	44
14....	64	44	54	41	56	39	58	47	54	46	62	44	62	47	61	45	62	42	71	49	59	43	69	52	53	44	65	41
15....	51	35	48	34	47	32	52	34	45	39	49	41	48	34	48	39	43	35	52	37	46	40	52	40	41	37	48	39
16....	50	37	44	30	41	35	49	37	49	37	50	40	46	34	48	35	55	34	51	34	48	32	51	34	52	24	57	34
17....	52	27	46	27	47	26	48	29	45	32	49	36	49	28	47	29	44	38	54	26	48	29	51	26	56	36	49	27
18....	43	32	40	27	40	34	45	34	47	35	46	37	43	36	47	38	50	37	45	32	47	30	50	30	53	30	52	25
19....	58	24	49	24	47	22	54	25	59	25	58	34	55	25	55	26	67	27	59	22	61	28	62	24	60	31	59	26
20....	65	36	61	32	61	29	64	36	61	27	63	43	61	39	62	40	68	29	65	38	65	40	66	39	60	47	63	35
21....	70	32	65	32	65	39	68	33	67	32	71	44	67	35	68	34	73	33	72	32	70	34	69	30	68	33	71	30
22....	62	37	61	40	59	44	63	40	67	35	68	48	65	41	66	43	65	43	67	41	64	42	68	37	65	47	67	31
23....	58	32	54	30	53	30	59	32	54	33	56	41	56	33	56	31	58	30	55	36	59	33	61	34	55	30	55	28
24....	52	39	45	35	43	37	54	35	45	33	48	34	50	35	46	40	45	31	53	38	48	34	51	39	44	33	47	36
25....	45	33	40	32	43	32	44	34	42	32	46	33	44	29	43	32	37	31	49	31	46	32	54	27	46	30	47	31
26....	49	29	43	32	42	34	47	34	45	33	48	34	46	28	45	31	49	33	51	27	47	32	51	27	47	28	49	26
27....	50	26	42	28	44	26	48	28	44	28	48	34	45	27	45	28	46	27	51	23	49	29	62	24	44	27	46	21
28....	38	27	37	28	35	28	37	31	38	28	42	33	39	29	40	31	38	30	44	27	40	32	43	31	36	27	39	30
29....	44	20	44	23	40	21	43	22	49	23	47	28	43	23	45	22	57	19	42	16	45	25	46	19	47	22	49	18
30....	55	29	49	27	45	19	53	27	53	26	55	35	61	28	53	21	58	32	55	24	54	28	59	27	55	34	57	22
Mns..	57.6	35.3	53.0	33.8	52.9	34.0	57.0	35.8	55.3	34.4	56.6	40.6	55.7	35.1	55.9	35.7	58.9	34.5	60.4	36.4	56.9	36.9	61.0	35.5	56.2	36.4	59.5	32.6

a, b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

§ Data are from standard instruments not supplied by the U. S. Weather Bureau.

§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.



## CLIMATOLOGICAL DATA FOR NOVEMBER, 1912.

## DISTRICT NO. 2, SOUTH ATLANTIC AND EAST GULF STATES.

CHARLES F. VON HERRMANN, District Editor.

## GENERAL SUMMARY.

Pleasant weather prevailed during November, 1912, throughout most of the district. The month was generally free from storms, the percentage of sunshine was high, and a long period of fine, dry weather prevailed from the 8th to 26th, which was hardly interrupted by the scattered showers that occurred in some sections on various dates from the 12th to 14th. Country roads remained in good order, and conditions were exceptionally favorable for farm work of all kinds. The period of good weather was terminated, however, in rather a spectacular manner by the unprecedented snowstorm of the night before Thanksgiving Day, during which snow fell in every State in the district, measurable amounts occurring as far south as Thomasville, Ga., and east to the Atlantic coast line in North Carolina. Both in depth and earliness of occurrence this storm surpassed all previous records for November at a large number of stations in Alabama, Georgia, and the Carolinas. The precipitation was decidedly below normal in Alabama and the Mississippi areas, but in other States did not depart materially from the normal.

The temperature was about normal in Virginia and decidedly below normal in Georgia, Alabama, and Mississippi, where the average deficiency somewhat exceeded 3°. The first killing frosts occurred quite generally in the interior of the district on the 3d or 4th, but were deferred to the close of the month in the coastal regions.

The range of pressure during November was about 1 inch. Relatively few distinct barometric depressions influenced the weather throughout the district during the month, of which only two require special mention.

A storm of moderate force appeared in Kansas on the 5th; moved to southern Illinois on the 6th; thence passed rapidly southeastward to central North Carolina and South Carolina by the morning of the 7th, and moved up the Atlantic coast. It was accompanied by heavy rains in the central portions of the district, from Pensacola to Raleigh, and gave the lowest atmospheric pressures for the month at all stations on the 6th or 7th. The minimum for the district was 29.57 inches at Lynchburg, Va., on the morning of the 7th. A number of areas of high atmospheric pressure persisted over the district for as many as four or five days at a time, the maximum occurring generally on the 4th in the Atlantic States and on the 28th or 29th in the Gulf States, with the highest, 30.60 inches, on the 4th at Norfolk, Va.

## TEMPERATURE.

A marked deficiency of from 3° to 5° occurred during November in western Georgia, Alabama, and eastern Mississippi, and in these States the month must be considered unusually cold. In Georgia the mean for November was appreciably lower only once before, namely, in 1901. In the States bordering the Atlantic the deficiencies were smaller, and in Virginia about normal conditions

prevailed. The first day of the month was decidedly warm in almost all sections, and in Florida over 75 per cent of the stations registered the highest temperatures for the month on that date, but the longest and most pronounced period of warm weather prevailed from the 11th to 13th or 14th, with maximum temperatures above 80° in all States and above 90° in Florida.

Three periods of cold weather prevailed during the month. The first resulted in the earliest killing frosts of the season on the 3d and 4th over most of the interior portions of the district, heavy frost occurring as far south as Thomasville. The second period prevailed just after the middle of the month, with frosts on the 16th and 17th in all but the immediate coast regions. The last and longest of these "cold spells" began about the 25th, and freezing temperatures were registered daily until the 30th. The coldest day was the 29th, and the line of freezing temperature passed from a point on the North Carolina coast along the coast line just west of Hatteras, Charleston, Savannah, and Jacksonville to Gainesville, Fla. (minimum 32°), thence westward along the Gulf coast to Mobile, Ala. (minimum 33°). The cold wave reached southern Florida about the 28th, giving freezing temperatures in western and interior counties, with frosts as far south as Polk County. Timely warnings for frosts were distributed, and no damage to crops was reported.

The mean temperature for the district as a whole was 52.4° and the departure -2°. Monthly means at individual stations ranged almost uniformly between 45° and 55°, except in Florida, where they were from 55° to 65°, a few points, however, exceeding 70°. The highest monthly mean was 72.7° at Key West, Fla., and the lowest 41.4° at Hot Springs, Va. The maximum temperature for the district was 92° on the 14th at Orange City, Fla., and the minimum 12° on the 29th at Hot Springs, Va. Minimum temperatures as low as 17° occurred in Alabama and South Carolina, and as low as 16° in Georgia.

## PRECIPITATION.

The salient features in regard to precipitation were the small average number of rainy days, the uniformity in the distribution of the rainfall, the State averages departing but slightly from the mean for the entire district except in Mississippi where the amount was small, and the unusual snowstorm on the night of November 27. The State averages were slightly above the normal in Virginia, South Carolina, and Florida, slightly below normal in North Carolina and Georgia, and about an inch and a half below normal in Alabama and Mississippi. The average for the entire district was 2.37 inches and the departure -0.31 inch. The average number of days with appreciable rainfall was only 4.

Precipitation occurred in distinct and brief periods about the 1st and 2d, 5th to 7th in south and 6th to 8th in north portion, and on the 27th to 28th, with a few showers at widely separated stations about the 12th to



14th. The latter were hardly sufficient to interrupt the long period of dry pleasant weather that prevailed generally for 18 days from the 8th to the 26th, except in Florida.

The heaviest rains for the month occurred in connection with the storm that passed from the central Mississippi Valley to South Carolina on the 6th-7th. The largest amounts occurred over a relatively narrow strip of country extending from southeastern Alabama through central Georgia to the central portion of northwestern South Carolina. In Alabama the largest amount for the month was 7.10 inches at Andalusia, in Georgia 5.13 inches at Camak, and in South Carolina 6.35 inches at Little Mountain. Heavy rains also fell during this period over that portion of Florida west of the Suwanee River with considerable damage to crops and stock by high water. In Florida a period of local heavy rains occurred on the 21st to 22d in the extreme southern part with an excessive rainfall of 10.67 inches at Miami. The maximum amounts in 24 hours were: Miami, 7.74 inches on the 21st-22d; Andalusia, Ala., 6.40 inches on the 6th; Camak, Ga., 4.08 inches on the 6th-7th; and Little Mountain, S. C., 5.50 inches on the 7th.

The long period of fine weather was at length terminated by the remarkable snowstorm of Thanksgiving Eve. This appears to have been an area of precipitation in front of an advancing high, aided by a slight disturbance that passed northward along the Atlantic coast to Hatteras, where it caused dangerous gales on the 28th with a maximum velocity of 66 miles northwest. Snow fell over an unusually wide extent of territory, covering the entire northern half of the district with an average depth of over 2 inches, and extending southward even into Florida near the southwest corner of Georgia in measurable quantities. Thomasville, in extreme southern Georgia, received 1 inch, and also Wilmington, N. C., on the Atlantic coast. The largest amount was over 7 inches at Henderson, N. C. The average depth of unmelted snow was 1.5 inches in Virginia, 2.3 inches in North

Carolina, 1.3 in South Carolina, 1.6 in Georgia, and 0.7 inch in Alabama. Owing to the cold weather that followed, the snow did not entirely disappear for several days even as far south as Atlanta.

#### MISCELLANEOUS PHENOMENA.

The winds were somewhat variable during the month with the prevailing direction from the north in the Gulf States and from the west or southwest in the States bordering the Atlantic. Average hourly velocities exceeding 10 miles occurred at Hatteras, Atlanta, Savannah, Key West, Miami, and Pensacola. High winds occurred on the 28th on the North Carolina coast, with 58 miles north at Cape Henry and 66 miles northwest at Hatteras.

The average number of clear days was 20, partly cloudy days 5, and cloudy days 5. The percentage of sunshine was unusually high, the average for 18 regular weather bureau stations being 71 per cent, total number of hours 223. The percentage of sunshine reached a maximum of over 80 per cent in central North Carolina, and was least in extreme southern Florida—Miami, 54 per cent.

#### RIVER CONDITIONS.

With the exception of the Roanoke in North Carolina and the Santee system in South Carolina, the rivers throughout the entire district were low during November, and in the Gulf States navigation was interrupted during a large part of the month. In consequence of the heavy rains of the 6th-7th the Roanoke River experienced a rapid rise at Weldon, N. C., to a maximum stage of 28 feet (flood stage 30 feet) for which warnings were issued. In South Carolina flood stages were slightly exceeded in the Wateree at Camden, in the Saluda at Chappells, and in the Congaree at Columbia, and at Ferguson and Rimini on the Santee about the 8th to 12th. Warnings were issued in all cases and the losses reported were insignificant.



TABLE 1.—Climatological data for November, 1912. District No. 2, South Atlantic and East Gulf States.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of overcast cloudy days.
Virginia.																				
Arvonia	Buckingham	350	8	48.2		79	12	20	29	40	2.88	+ 0.74	2.13	1.5	5	19	7	4	sw.	Rev. Plummer F. Jones.
Ashland	Hanover	221	21	48.6	+ 1.5	77	12	19	29	34	1.75	- 0.67	1.50	2.5	2	22	5	3	s.	E. I. C. Scott.
Buchanan	Botetourt	820	8								2.63	+ 0.13	1.48	2.0	6				n.	D. D. Booz.
Callville	Brunswick	250	18	48.2	- 1.0	77	6	13	29	42	1.79	- 0.23	1.00	3.0	3	22	6	2	n.	F. M. Gage.
Cape Henry	Princess Anne	20	38	51.5	- 0.6	77	1	32	30	28	1.72	- 1.02	0.93	T.	5	18	6	6	sw.	U. S. Weather Bureau.
Catawba	Roanoke	1,760	1	45.3		72	12	16	29	36	2.87		2.10	1.5	5	21	7	2	w.	State Board of Health Sanatorium.
Charlottesville	Albemarle	800	23	50.0	+ 2.3	78	12	24	29	36	3.42	+ 1.00	2.95	1.0	3	21	0	9	sw.	Leander McCormick Observatory.
Clarksville	Mecklenburg	286	18								2.31	- 0.10	1.45	2.0	4				sw.	J. A. Ligon.
Columbia	Fluvanna	246	14	45.2	- 0.8	77	12	19	29	39	3.11	+ 1.11	2.30	1.0	5	19	7	4	sw.	Chesapeake & Ohio Ry.
Danville	Pittsylvania	413	12								3.97	+ 1.37	1.76	0.9	5					C. G. Watkins.
Diamond Springs	Princess Anne	25	2	50.8		77	11	24	29	38	2.14		0.77	0	4	25	4	1		Virginia Truck Exp. Sta.
Dry Bridge	Chesterfield	325	1								2.15		1.13	3.0	5					Dr. E. W. Magruder.
Hampton	Elizabeth City	5	29	51.6	+ 0.8	74	6	27	29	22	1.55	- 0.97	0.80	1.0	3	15	7	8	nw.	Normal and Agri. Inst.
Hot Springs	Bath	2,195	20	41.4	+ 0.2	72	13	12	29	39	2.41	+ 0.36	2.02	0.4	5	20	4	6		F. M. Terry.
Ivor	Southampton	87	3	49.2		80	12	15	29	43	3.20		2.00	2.5	5					No. & W. Ry. Exp. Farm.
Lassiter	Goochland	100	2								2.33		1.87	1.5	3	27	2	1		T. J. Davis.
Lexington	Rockbridge	1,060	35	43.0	- 0.5	76	12	15	29	46	2.18	- 0.45	1.27	0.5	5	21	3	6		Virginia Military Institute.
Lynchburg	Campbell	685	41	47.5	+ 1.3	79	12	23	29	38	2.72	- 0.07	1.94	1.0	5	11	13	6	nw.	U. S. Weather Bureau.
Newport News	Warwick	55	9	51.3		77	13	27	29	34	2.44		1.08	3.0	5	22	6	2	nw.	C. W. Ashby.
Norfolk	Norfolk	91	42	51.6	+ 0.4	77	12	29	29	28	1.96	- 0.76	0.77	0.5	4	20	5	5	s.	U. S. Weather Bureau.
Randolph	Charlotte	334	8								3.62		1.71	1.3	4					W. J. Abbott.
Richmond	Henrico	144	33	48.1	- 0.7	78	12	20	29	36	1.73	- 0.66	0.79	2.0	5	15	11	4	s.	U. S. Weather Bureau.
Roanoke	Roanoke	907	2	46.2		72	12	18	29	32	2.29		1.69	2.2	5	23	3	4	w.	Reese F. Bell.
Rocky Mount	Franklin	1,150	18	46.4	- 2.1	78	12	13	29	42	2.80	+ 0.24	1.70	1.0	5					G. W. B. Hale.
Ruckersville	Greene	625	1	46.8		78	12	17	29	41	2.90		2.12	1.4	5					Dr. Jesse Ewell.
Spottsville (near)	Surry	15	24	50.6	+ 2.2	80	1	21	27	40	2.51	- 0.24	1.98	2.5	4	22	2	6	sw.	B. W. Jones.
Williamsburg	James City	70	21	49.2	+ 0.7	77	1	18	29	33	1.50	- 1.02	1.10	2.0	4	24	3	3	sw.	Eastern State Hospital.
North Carolina.																				
Albemarle	Stanly	700	.....	48.2		81	12	19	29	48	3.12		2.50	1.5	4	27	0	3	sw.	M. J. Harris.
Beaufort	Carteret	10	11	56.2	+ 0.1	76	6	33	29	27	2.51	- 0.05	1.00	T.	8	17	9	4	n.	Lewis Radcliffe.
Behaven	Beaufort	4	3	52.8		83	12	24	29	38	0.95		0.75	2.0	2	21	5	4	n.	A. L. Bell.
Caroleen	Rutherford	806	12	47.4	- 2.6	78	11	19	29	44	3.67	+ 1.09	2.50	2.5	5	22	5	3	nw.	S. B. Tanner.
Chalybeate Springs	Harnett	500	6	49.1		82	12	11	29	48	2.60		1.58	3.0	6	24	4	2	sw.	J. A. Smith.
Chapel Hill	Orange	500	54	51.0	- 1.1	84	12	18	29	42	2.00	- 0.78	1.34	2.0	5	25	4	1	sw.	Prof. A. H. Patterson.
Charlotte	Mecklenburg	773	36	49.8	- 0.6	77	11	26	29	36	1.90	- 0.96	1.62	1.3	6	18	6	6	sw.	U. S. Weather Bureau.
Chimney Rock	Rutherford	1,150	2	50.1		82	11	18	29	41	2.70		2.05	1.5	4	23	5	2	w.	J. M. Flack.
Durham (near)	Durham	406	3								2.58		1.76	4.1	3					J. C. Michie.
Eagletown	Northampton	66	7	49.5		78	12	19	29	38	2.50		1.37	2.0	4	21	9	0	nw.	J. T. Elliott.
Edenton	Chowan	30	18	51.0	- 0.6	82	1	26	19	34	2.10	- 0.75	0.80	2.0	4	22	4	4	w.	E. R. Conger.
Elizabeth City	Pasquotank	8	.....	50.8		77	1	23	29	35	2.15		1.20	2.5	3	25	0	5	sw.	W. J. Simmons.
Elizabethtown	Bladen	60	1								1.40		1.25	2.5	3					J. W. Hall, Jr.
Enfield (near)	Halifax	99	1								1.88		1.12	2.5	5					T. S. Inboden.
Fayetteville	Cumberland	170	25	52.0	+ 0.2	86	12	23	29	42	2.94	+ 0.13	1.85	1.0	5	20	3	7	nw.	Frank Glover.
Globe (near)	Caldwell	1,800	.....	46.0		80	12	17	29	44	2.99		1.62	1.0	5	25	4	1	s.	Julius L. Gragg.
Goldsboro	Wayne	102	42	48.6	- 2.6	77	7	21	29	43	1.79	- 0.51	0.85	2.0	7	17	11	2	w.	Mrs. J. J. Robinson.
Gorge (near)	Caldwell	1,358	.....	45.2		80	12	15	29	46	2.67		1.58	2.0	4	11	15	4	sw.	A. J. Bagley.
Graham	Alamance	656	10								3.63	+ 1.42	2.40	3.0	5					Dr. W. R. Goley.
Greensboro	Guilford	843	31	48.8	+ 0.2	81	13	21	29	40	3.91	+ 1.24	3.49	.....	4					A. H. Horry.
Greenville	Pitt	75	19								2.20	- 0.47	0.98	4.3	7					R. M. Hearn.
Hatteras	Dare	11	38	55.5	- 1.2	75	1	36	29	21	3.04	- 1.63	1.63	T.	6	20	3	7	n.	U. S. Weather Bureau.
Henderson	Vance	508	19	49.0	- 0.5	79	12	23	29	34	2.45	- 0.30	1.32	7.5	4	20	9	1	nw.	Enoch Powell.
Kinston	Lenoir	46	14	51.4	+ 0.3	82	12	20	29	44	1.59	- 0.74	0.95	3.5	4	21	5	4	nw.	H. C. V. Peebles.
Lincolnton	Lincoln	994	7	46.3		80	12	16	29	49	2.59		1.85	2.0	4	5	22	3	nw.	S. P. Houser.
Louisburg	Franklin	375	21	46.8	- 1.6	78	1	18	29	37	1.76	- 0.72	1.40	3.0	4	21	6	3	nw.	T. B. Wilder.
Lumberton	Robeson	102	29	50.8	- 0.2	82	12	22	29	45	2.17	- 0.05	0.85	2.0	7					B. M. Davis.
Manteo	Dare	12	7	51.6		75	13	28	19	34	2.68		1.28	.....	6	20	6	4	sw.	U. S. Weather Bureau.
Marion	McDowell	1,425	20	46.7	- 2.2	80	11	16	29	44	3.32	+ 0.25	1.86	2.8	5	22	7	1	ne.	Sergt. Thomas McGuire.
Middletown	Hyde	4	1	51.2		78	12	27	20	42	2.87		1.12	.....	7	24	4	2	n.	J. S. Mann.
Moncure	Chatham	145	18	48.1	- 2.1	81	12	18	29	53	2.60	+ 0.01	1.20	2.0	6	19	9	2	nw.	B. J. Utley.
Monroe	Union	586	18	49.8	- 0.3	79	11	19	29	44	3.93	+ 1.03	2.85	3.0	4	21	4	5	sw.	T. A. Ashcraft.
Morganton	Burke	1,135	25	47.7	- 0.4	80	11	17	29	46	2.89	+ 0.18	1.68	2.5	4	24	3	3	sw.	J. B. P. Massey.
Mount Airy	Surry	1,048	24	46.7	+ 0.3	79	12	14	29	48	3.11	+ 0.48	1.76	2.0	5	25	2	3	nw.	Prof. A. H. Merritt.
Mount Holly	Gaston	616	15								2.06	- 0.59	1.51	1.0	5					J. W. Holland.
Nashville	Nash	190	8	48.8		79	12	18	29	41	2.47		1.61	6.5	5	20	4	6	n.	J. B. Boddie.
Neuse	Wake	266	.....								2.20		1.46	2.5	5					Gaston H. Mooneyham.
Newbern	Craven	12	30	51.0	- 3.1	83	12	20	29	49	1.96	- 0.97	0.93	T.	4	21	5	4	sw.	J. B. Hill.
North Wilkesboro (near)	Wilkes	1,700	.....	49.8		80	12	20	29	39	3.20		1.40	5.0	4	20	3	7	w.	Dr. Charles A. Willis.
Parkersburg	Sampson	121	.....	50.2		83														



TABLE 1.—Climatological data for November, 1912. District No. 2—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.		Number of cloudy days.	Prevailing wind direction.
South Carolina.																				
Aiken.....	Aiken.....	565	17	53.4	- 1.2	76	11	27	25	35	3.10	+ 0.60	2.00	T.	3	23	4	3	sw.	C. E. Carman.
Allendale.....	Barnwell.....	186	23	52.2	- 3.4	79	11†	27	27	45	1.30	+ 0.57	1.30	T.	1	25	0	5	w.	Richard Hiers.
Anderson.....	Anderson.....	764	10	51.9	+ 0.4	80	1	24	28†	40	3.90	+ 1.12	1.88	2.0	5	23	0	7	w.	H. H. Russell.
Batesburg.....	Lexington.....	656	23	52.3	- 1.9	78	12	27	29	40	4.17	+ 1.71	3.17	1.8	3	24	3	3	e.	E. J. Hite.
Beaufort.....	Beaufort.....	20	25	55.6	- 3.6	77	13	29	28	32	1.05	- 1.13	0.58	0	3	24	3	3	ne.	Miss Lillian H. Rice.
Blackville.....	Barnwell.....	296	22	53.8	- 1.9	83	12	24	29	45	2.26	- 0.25	1.60	1.3	4	20	3	7	nw.	Miss M. E. Lange.
Blairs.....	Fairfield.....	293	6								4.14		3.70	1.0	3	23	2	5	sw.	J. N. Owens.
Bowman.....	Orangeburg.....	160	10	52.4	- 2.1	82	1	21	19	46	0.63	- 1.08	0.35	1.0	2	25	4	1	w.	B. O. Evans.
Broxton.....	Hampton.....		1								2.54		1.90	0	2	25	0	5		Thomas D. Williams.
Calhoun Falls.....	Abbeville.....	508	18								3.89	+ 1.35	2.54	2.0	4	19	8	3	w.	L. M. Parker.
Camden.....	Kershaw.....	222	45	52.6		80	11†	25	29	42	2.28	+ 0.11	1.50	1.5	4	26	3	1	ne.	W. C. Brown.
Catawba.....	York.....	562	6								4.05		3.50	1.5	4	22	2	6	n.	James C. Faris.
Chappells.....	Newberry.....	402	6								4.05		3.02	3.2	3	25	1	4	w.	J. J. Murrain.
Charleston.....	Charleston.....	48	41	56.5	- 1.6	81	1	34	29	26	1.30	- 1.57	0.64	0	6	18	6	6	n.	U. S. Weather Bureau.
Cheraw.....	Chesterfield.....	144	23	51.4	- 1.0	81	11†	23	29	43	2.64	+ 0.49	1.00	2.5	6	23	4	3	nw.	J. H. Powe.
Clemson College.....	Oconee.....	850	20	47.4	- 3.7	71	11†	22	29	41	4.02	+ 1.22	1.50		5	21	5	4	w.	Prof. John H. Hook.
Columbia.....	Richland.....	351	25	52.2	- 1.6	78	12	28	29	36	2.41	+ 0.18	1.75	1.0	6	21	7	2	n.	U. S. Weather Bureau.
Conway.....	Horry.....	25	19	54.8	+ 0.4	84	7	23	29†	48	1.78	- 0.52	0.98	1.0	3	21	0	9	n.	Paul Quattlebaum.
Dillon.....	Dillon.....	100	7	52.3	- 1.2	81	11†	22	29†	48	0.88	- 1.31	0.82		3					A. E. Rowell.
Edisto.....	Bamberg.....	127	24								1.03		0.80	0.2	4	24	3	3	ne.	Nathan Jenkins.
Effingham.....	Florence.....	106	19								0.50	- 1.94	0.40	1.0	2	27	0	3	ne.	H. B. McCall.
Ferguson.....	Berkley.....	51	3	52.2	- 3.3	79	7†	24	29	41	0.97	- 1.26	0.70	0.5	3	23	1	6	nw.	Dr. J. R. Des Portes.
Georgetown.....	Georgetown.....	12	18	55.9	- 4.0	84	12	26	29	39	1.99	- 0.23	1.02	0	2	18	11	1	n.	A. P. Hazard.
Greenville.....	Greenville.....	989	19	47.4	- 2.2	76	12	17	29	47	3.62	+ 0.34	2.00	2.5	4	23	1	6	n.	Spartan Goodlette.
Greenwood.....	Greenwood.....	671	23	50.4	- 1.6	77	12	26	29†	41	3.03	+ 0.25	2.58	2.0	3	23	0	7	w.	M. M. Calhoun.
Heath Springs.....	Langston.....	568	10	51.8		79	20	23	29	48	4.13		3.78	2.0	4	18	9	3	w.	Charlie Bowers.
Kingsree.....	Williamsburg.....	54	23	51.2	- 4.3	81	12	22	29	45	1.44	- 0.74	0.70	1.0	3	23	1	6	n.	A. O. Matthews.
Liberty.....	Pickens.....	900	17	48.8	- 2.1	79	12	22	29	40	3.45	+ 0.77	1.10	4.0	5	22	6	2	sw.	John T. Boggs.
Little Mountain.....	Newberry.....	711	18	52.8	- 0.9	76	12†	29	31	6.35	+ 4.05	5.50	4.0	3	27	2	1	w.	J. M. Sease, M. D.	
Meriwether.....	Edgefield.....		2	52.0		79	12†	23	29	43	4.66		3.76		4	20	2	8	w.	William S. Middleton.
Monetta.....	Aiken.....			53.0		77	12	27	29	34	3.50		2.90		4	24	2	4	w.	Joseph M. Johnson.
Newberry.....	Newberry.....	502	7	51.2	- 2.5	78	1	24	27†	40	5.32	+ 2.29	4.55	3.0	5	20	7	3	w.	W. G. Peterson.
Pelzer.....	Anderson.....	873	6								4.57		2.40	2.5	5	20	4	6	w.	J. M. Ward.
St. George.....	Dorchester.....	109	23	51.0	- 4.7	75	7†	25	29†	41	0.93	- 1.00	0.80	T.	2	23	0	7		G. F. Lewis.
St. Matthews.....	Calhoun.....	209	23	52.8	- 2.1	76	12	28	29	39	1.95	- 0.14	1.35	1.0	2	22	0	8	w.	J. S. Wannamaker.
Saluda.....	Saluda.....	530	9	52.5		83	12	21	29	47	4.61		3.70	1.5	3	25	3	2	w.	Mrs. F. V. J. Maxwell.
Santuc.....	Union.....	572	16	50.4	- 1.1	77	12	23	29	36	3.36	+ 0.58	2.57	2.0	5	21	3	4	w.	E. W. Jeter.
Smiths Mills.....	Williamsburg.....	62	16								0.85	- 1.64	0.52	1.0	4	27	0	3	e.	W. G. Walker.
Society Hill.....	Darlington.....	75	14	53.7	+ 1.2	80	11†	27	26†	33	1.68	- 0.60	0.72	3.0	5	20	7	3	n.	T. Ellison Simpson.
Spartansburg.....	Spartansburg.....	875	20	48.0	- 3.5	78	11	20	29	42	4.00	+ 1.22	2.90	2.0	6	19	0	11	sw.	F. P. Robinson.
Summersville.....	Dorchester.....	75	14	53.0	- 3.0	77	13	25	19	37	1.19	+ 1.36	0.70	T.	5	7	21	2	sw.	Miss E. H. Gadsden.
Trenton.....	Edgefield.....	620	18	52.4	- 3.1	76	23	29	25†	36	5.44	+ 2.94	4.15	2.5	4	21	8	1	w.	C. A. Long.
Walterboro.....	Colleton.....	69	7	55.6		82	12	27	17†	44	1.15		0.65	0	4	29	0	1	sw.	B. Levy.
Winnboro.....	Fairfield.....	545	21	51.0	- 2.7	75	12	28	26†	34	1.43	- 0.75	0.73	2.0	3	25	4	1	sw.	J. W. Seigler.
Winthrop College.....	York.....	690	12	50.8	- 1.7	78	11	24	29	35	2.00	- 0.42	1.80	2.0	2	19	9	2	nw.	W. P. Goodman.
Yemassee.....	Hampton.....	23	16	50.6	- 5.5	80	11	23	29	44	1.32	- 0.66	0.75	T.	4	22	2	6	n.	J. G. Hutson.
Georgia.																				
Abbeville.....	Wilcox.....	180	9								2.36		1.25	2.0	4	26	2	2	n.	W. H. Calhoun.
Adairsville.....	Bartow.....	772	20	46.4	- 4.0	72	12	20	29	39	1.97	- 0.76	0.95	3.0	4	22	2	6	ne.	Mrs. R. C. Evans.
Albany.....	Dougherty.....	232	25	54.4	- 3.4	80	1	27	29	37	2.79	+ 0.51	2.10	1.0	3	25	3	2	nw.	George C. Brosnan.
Allapaha.....	Berrien.....	293	23	53.6	- 4.2	80	12	24	29	42	1.75	- 0.10	1.30	0.5	4	20	3	7	ne.	J. F. Rice.
Athens.....	Clarke.....	694	30	49.3	- 1.9	77	11†	22	29	41	1.84	- 1.01	1.05	2.0	4				w.	C. D. Cox.
Atlanta.....	Fulton.....	1,218	47	50.0	- 1.8	73	11	26	28	25	1.05	- 2.28	0.64	2.2	5	21	2	7	w.	U. S. Weather Bureau.
Augusta.....	Richmond.....	180	66	52.8	- 1.6	78	12	28	29	36	3.54	+ 0.88	2.84	T.	5	21	6	3	w.	Do.
Bainbridge.....	Decatur.....	119	20								3.08	+ 1.58	2.15	1.0	3	21	1	8	sw.	Mrs. C. O. Wimberley.
Butler.....	Taylor.....	650	11								2.80	+ 0.40	1.62	2.0	3				nw.	Mrs. M. F. Wallace.
Camak.....	Warren.....	613	20	52.9	- 1.0	78	12	24	29	40	5.13	+ 2.99	4.08	2.5	3	20	2	8	nw.	J. A. Chapman.
Canton.....	Cherokee.....	894	21								1.64	- 2.02	1.02	1.1	4	20	2	8	nw.	G. W. Evans.
Carlton.....	Madison.....	557	13								2.63	+ 0.51	1.50	2.0	5				w.	M. C. Power.
Clayton.....	Rabun.....	2,100	18			76	11				3.21	- 0.31	1.25	2.0	6				w.	A. J. Duncan.
Columbus.....	Muscogee.....	262	24	52.7	- 3.0	79	11†	25	29	42	1.54	- 1.09	1.16	1.0	3				nw.	A. J. Land.
Concord.....	Pike.....	850		50.8		80	12	24	29	42	1.55		1.03	3.0	3					C. T. Smith.
Covington.....	Newton.....	800	20								2.15	- 0.57	1.00	2.5	4	14	10	6	e.	Mrs. Sarah E. Cruse.
Dahlonega.....	Lumpkin.....	1,519	20	47.0	- 3.0	73	11	19	29	39	1.90	- 1.46	0.86	2.0	6	16	11	3	nw.	Prof. B. P. Gaillard.
Diamond.....	Gilmer.....	2,020	20	44.8	- 3.8	71	11†	16	29	41	2.44	- 1.32	1.08	2.0	6	21	2	7	nw.	R. A. Kimzey.
Dublin.....	Laurens.....	452	18	51.8		80	12	24	19†	48	2.69	+ 0.18	1.56							



TABLE 1.—Climatological data for November, 1912. District No. 2—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of overcast days.
Georgia—Continued.																				
Quitman	Brooks	173	26	55.4	- 4.0	83	1	28	29	40	2.52	+ 0.53	1.91	0.2	3	22	1	7	nw.	A. B. Jones.
Ramhurst	Murray	19	19	48.6	- 3.5	73	12	23	29	37	1.19	- 1.82	0.87	T.	5	22	1	7	n.	D. E. Humphreys.
Resaca	Gordon	657	18	56.5	- 1.2	79	12	33	29	26	1.56	- 1.50	1.56	T.	1	26	0	4	n.	D. A. Norton.
Rome	Floyd	576	53	46.6	- 4.6	77	11	22	29	44	1.53	- 1.78	1.08	1.5	4	22	2	6	w.	W. M. Towers.
St. George	Charlton	5	56.5	- 1.2	84	1	30	25	36	1.45	- 0.57	0.53	0	5	15	7	8	n.	A. N. Lund.	
St. Marys	Camden	20	21	57.2	- 2.9	84	1	30	25	36	1.45	- 0.57	0.53	0	5	15	7	8	ne.	David C. Sterling.
Savannah	Chatham	65	61	57.0	- 1.2	79	12	33	29	26	1.18	- 0.95	0.54	0	7	17	8	5	nw.	U. S. Weather Bureau.
Statesboro	Bulloch	253	12	55.6	- 1.8	81	13	27	29	39	1.65	- 0.41	0.98	T.	4	18	10	2	n.	W. C. Cromley.
Talbotton	Talbot	750	18	54.0	- 0.8	79	11	25	29	42	1.64	- 1.40	0.70	2.5	4	20	1	9	nw.	Dr. E. L. Bardwell.
Tallapoosa	Haralson	1,150	13	46.7	- 5.3	76	11	19	29	46	1.10	- 1.58	0.70	2.0	3	19	4	7	nw.	Frederick Ellison.
Thomasville	Thomas	273	30	54.8	- 4.4	83	1	26	29	40	3.79	+ 1.19	2.83	1.0	5	19	4	7	nw.	U. S. Weather Bureau.
Toccoa	Stephens	1,050	26	55.3	- 4.4	83	12	22	29	40	2.31	- 0.68	0.85	1.0	5	19	4	7	n.	Mrs. Alice N. Starke.
Valdosta	Lowndes	220	7	55.3	- 4.4	83	11	24	29	45	2.20	- 0.68	0.85	1.0	5	19	4	7	n.	Miss Annie Twitty.
Valonia	McIntosh	10	14	55.3	- 4.4	83	11	24	29	45	2.20	- 0.68	0.85	1.0	5	19	4	7	n.	George E. Atwood.
Washington	Wilkes	630	21	51.0	- 1.8	77	12	26	29	40	1.98	- 0.74	1.42	1.0	5	24	2	4	ne.	Miss Ella B. Smith.
Waycross	Ware	131	23	55.4	- 4.1	83	12	27	29	44	2.07	+ 0.49	0.91	0	6	20	4	6	n.	Thomas Sasser.
Waynesboro	Burke	86	20	51.7	- 3.0	79	13	23	28	49	1.50	- 0.28	1.40	1.0	2	20	4	6	nw.	Mrs. H. W. Blount.
West Point	Troup	620	22	50.8	- 3.4	79	11	21	29	43	1.49	- 1.31	1.05	2.0	3	21	2	7	nw.	E. N. Dunn.
Woodbury	Meriwether	641	9	50.8	- 3.4	79	11	21	29	43	1.53	- 1.31	1.05	2.0	3	21	2	7	n.	E. T. Riggins.
Florida.																				
Apalachicola	Franklin	24	8	59.6	- 0.6	85	1	35	28	26	5.76	- 0.21	4.80	0	3	17	12	1	ne.	G. H. Whiteside.
Arcadia	De Soto	61	11	66.8	- 0.6	85	1	44	29	29	1.13	- 0.21	0.53	0	4	18	11	1	ne.	C. S. Bushnell.
Archer	Alachua	92	27	63.5	+ 0.6	81	15	37	19	36	1.27	- 0.44	0.93	0	5	21	8	1	n.	R. B. Hodgson.
Avon Park	De Soto	150	13	66.2	- 1.6	88	1	46	28	26	1.27	- 0.44	0.93	0	5	21	8	1	n.	William King.
Bartow	Polk	115	24	63.4	- 3.2	86	1	38	27	35	1.70	+ 0.02	0.57	0	9	19	5	6	ne.	William Hood.
Blountstown	Calhoun	3	3	63.8	- 1.6	88	1	25	28	36	3.76	- 0.57	0.53	T.	3	25	4	1	ne.	C. L. Hobbs.
Brooksville	Hernando	126	19	63.8	- 1.6	88	1	38	28	36	4.04	+ 2.44	2.30	0	3	20	6	4	ne.	C. C. Peck.
Carrabelle	Franklin	10	13	57.1	- 5.8	85	1	28	29	34	7.55	+ 5.52	5.20	0	5	16	12	2	ne.	J. J. Blomquist.
Cedar Key	Levy	10	23	62.0	- 1.2	81	1	38	28	30	2.35	- 0.00	1.60	0	6	16	12	2	ne.	J. B. Lutterloh.
Clermont	Lake	105	19	65.2	- 2.3	90	1	41	28	35	2.50	+ 1.29	1.25	0	4	16	12	2	ne.	S. S. Fesler.
De Funiak Springs	Walton	193	14	58.0	- 1.1	82	1	30	28	41	4.35	+ 0.75	2.58	0	3	22	5	3	n.	R. W. Storrs.
De Land	Volusia	27	15	61.4	- 3.0	89	1	34	26	36	2.37	- 0.52	1.42	0	3	12	16	2	ne.	A. C. Haynes.
Eustis	Lake	56	21	62.9	- 2.6	89	1	36	26	39	1.99	+ 0.52	1.42	0	6	22	5	3	ne.	C. T. Smith.
Federal Point	Putnam	20	20	62.8	- 0.9	89	12	36	28	38	1.47	- 0.67	0.51	0	6	20	9	1	nw.	E. S. Hubbard.
Fenholloway	Taylor	75	5	57.3	- 0.9	83	1	27	29	42	2.20	- 0.67	0.51	0	6	20	9	1	nw.	J. Wigglesworth.
Fernandina	Nassau	10	19	59.5	- 2.6	84	1	37	28	33	1.86	- 0.62	0.88	0	9	10	9	11	ne.	W. B. C. Duryee.
Fort Lauderdale	Dade	10	19	59.5	- 2.6	84	1	37	28	33	1.86	- 0.62	0.88	0	9	10	9	11	ne.	W. M. Heine.
Fort Meade	Polk	125	23	64.8	- 2.0	91	1	38	27	40	1.60	- 0.21	1.50	0	2	23	5	2	ne.	G. L. Brodrick.
Fort Myers	Lee	12	40	67.2	- 2.4	82	5	45	29	27	1.32	- 0.06	0.84	0	3	25	3	2	ne.	Miss M. M. Gardner.
Fort Pierce	St. Lucie	11	60.8	- 1.3	88	1	50	25	22	1.60	- 1.82	0.90	0	4	15	7	8	e.	T. C. Nicholson.	
Gainesville	Alachua	176	18	59.8	- 3.1	87	1	32	26	33	1.33	- 0.52	0.52	0	6	18	5	7	ne.	John Schnabel.
Garners (near)	Walton	22	14	57.1	- 3.5	88	1	38	28	33	2.30	- 0.52	0.52	0	6	18	5	7	ne.	U. S. Forest Service.
Grasmere	Orange	175	14	62.4	- 3.5	88	1	38	28	33	2.30	- 0.52	0.52	0	6	18	5	7	ne.	J. B. Escott.
Hilliard	Nassau	69	3	57.4	- 3.5	88	1	38	28	33	2.30	- 0.52	0.52	0	6	18	5	7	ne.	B. A. Tibbits.
Homestead	Dade	12	2	72.2	- 0.8	83	6	51	29	24	11.42	- 11.00	11.00	0	7	8	13	9	ne.	J. A. Kahl.
Hypoxylon	Palm Beach	9	16	71.4	- 1.1	89	1	53	26	26	2.13	- 1.05	0.95	0	7	17	9	4	ne.	G. A. Angevine.
Inverness	Citrus	43	12	60.6	- 2.2	83	1	34	26	31	3.92	+ 2.64	2.00	0	5	13	10	7	ne.	W. H. Miller.
Jacksonville	Duval	108	41	59.6	- 1.7	84	1	37	28	28	0.82	- 1.37	0.35	0	8	14	10	6	n.	U. S. Weather Bureau.
Jasper	Hamilton	152	11	56.2	- 4.7	81	12	26	28	42	1.45	+ 0.05	1.00	0	5	15	10	5	ne.	Mrs. W. C. Caldwell.
Johnstown	Bradford	125	12	56.2	- 4.7	81	12	26	28	42	1.45	+ 0.05	1.00	0	5	15	10	5	ne.	A. M. C. Brasch.
Key West	Monroe	14	41	72.7	- 1.6	84	1	58	28	17	1.17	- 1.19	0.78	0	4	15	8	7	n.	U. S. Weather Bureau.
Kissimmee	Osceola	65	19	65.6	- 1.6	87	1	43	26	28	3.01	+ 1.20	1.95	0	3	12	12	6	ne.	J. A. Simpson.
Lake City	Columbia	210	27	59.0	- 2.6	82	1	32	25	38	1.02	- 1.65	0.60	0	5	17	7	6	ne.	W. B. Knight.
Lucern Park	Polk	125	15	57.6	- 4.9	86	1	42	28	27	3.45	- 0.89	0.31	0	4	15	14	1	ne.	L. D. Niles.
Macclesney	Baker	200	12	57.1	- 4.2	79	1	31	29	34	2.63	+ 0.93	2.13	0	5	16	12	6	ne.	Griffing Bros. Co.
Madison	Madison	200	12	57.1	- 4.2	79	1	31	29	34	2.63	+ 0.93	2.13	0	5	16	12	6	ne.	E. J. Vann.
Malabar	Brevard	24	18	68.4	- 0.1	84	8	47	28	27	2.62	+ 0.38	1.80	0	6	16	12	6	ne.	J. F. Farley.
Marianna	Jackson	80	9	54.9	- 3.5	85	14	25	29	43	4.24	+ 1.29	3.32	T.	4	20	9	1	nw.	W. J. Watson.
Merritts Island	Brevard	20	29	67.4	- 1.2	84	1	47	28	20	2.75	+ 0.55	1.92	0	5	5	22	3	nw.	F. Ulrich.
Miami	Dade	47	10	71.5	- 0.5	88	1	52	28	23	10.67	+ 8.12	7.74	0	7	5	14	11	ne.	U. S. Weather Bureau.
Middleburg	Clay	49	10	59.2	- 1.4	87	1	30	19	43	0.91	- 0.45	0.34	0	5	16	12	6	ne.	G. A. Chalker.
Molino	Escambia	207	8	55.7	- 3.2	78	5	30	28	36	3.10	- 0.06	2.90	0	2	26	1	3	nw.	W. H. Trimmer.
Monticello	Jefferson	207	8	55.7	- 3.2	78	5	30	28	36	3.10	- 0.06	2.90	0	2	26	1	3	nw.	G. B. Miller.
Mount Pleasant	Gadsden	260	6	53.2	- 3.2	78	12	27	29	39	6.41	+ 2.72	4.00	0.5	4	14				



TABLE 1.—Climatological data for November, 1912. District No. 2—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Alabama—Continued.																				
Bermuda.	Conecuh.	25	53.2	- 3.3	79	12	24	29	39	3.56	+ 0.58	3.12	T.	3	18	8	4	n.	M. J. Morris.	
Birmingham.	Jefferson.	701	24	50.4	- 3.5	75	10	25	28	37	1.18	- 2.21	0.67	0.8	4	19	3	8	n.	U. S. Weather Bureau.
Calera.	Shelby.	500	11							0.91	- 1.59	0.60	T.	3					L. G. Privett.	
Camp Hill.	Tallapoosa.	738	11	52.0		81	9	18	29	50	1.60	- 1.03	1.10	2.0	3	21	6	3	w.	Dr. Lyman Ward.
Citronelle.	Mobile.	331	24	56.1	- 3.7	81	12	30	29	33	2.01	- 0.87	1.22	T.	3	22	4	4	n.	Rev. W. H. Rowe.
Clanton.	Chilton.	590	19	49.6	- 4.6	79	12	22	29	44	1.59	- 1.27	0.90	2.0	5				Joseph B. Downs.	
Cochrane.	Pickens.	100	2							1.10		0.80	1.0	3					T. H. G. Cook.	
Cordova.	Walker.	334	21	47.8	- 4.0	79	12	19	24†	49	1.69	- 1.24	1.14	2.0	4	25	0	5	ne.	Scott Maxwell.
Cullman.	Cullman.	802	4	46.3		76	20	19	29	48	1.18		0.76	0.5	3	22	5	3	n.	Eugene A. Grayot.
Dadeville.	Tallapoosa.	760	7							1.30		1.02	T.	2					Dr. W. B. Fulton.	
Daphne.	Baldwin.	21	57.6	- 2.1	81	12	31	3†	37	2.92	+ 0.34	2.10	0	4	21	7	2	nw.	John H. Young.	
Demopolis.	Marengo.	20								0.64	- 1.63	0.38	0	5					George E. Pegram.	
Dothan.	Houston.		54.9		76	12	30	28†	31	5.22		4.50	1.0	4	24	3	3	ne.	L. G. Biggers.	
Eufaula.	Barbour.	200	28	49.2	- 6.4	73	12	22	29	36	3.38	+ 0.54	2.64	2.5	5				Dr. J. B. Whitlock.	
Evergreen.	Conecuh.	285	28	55.4	- 1.1	79	5†	27	29	39	3.83	+ 0.66	2.00	0	4				George W. Salter.	
Fort Deposit.	Lowndes.	520	28	49.4	- 6.3	76	12	27	30	37	2.83	- 0.04	2.35	1.8	4				J. F. Hattomer.	
Gadsden.	Etowah.	621	28	49.1	- 2.5	76	11†	22	29	46	1.24	- 1.76	0.68	T.	5				D. P. Goodhue.	
Goodwater.	Coosa.	826	17	49.6	- 4.6	76	10†	21	29	47	1.40	- 1.48	0.90	1.0	3				Miss Daisy Buice.	
Greensboro.	Hale.	220	33	52.4	- 3.0	77	12	29	25	32	0.96	- 2.52	0.50	0.2	3				W. E. W. Yerby.	
Greenville.	Butler.	444	11							0.84	- 2.26	0.63	0	3					E. M. Lewis.	
Hamilton.	Marion.	16	48.8	- 4.2	80	11	17	25	51	1.13	- 2.05	0.54	0	4	20	3	7	nw.	Prof. H. O. Sargent.	
Healing Springs.	Washington.	362								0.92		0.52	1.0	3					J. E. Lipscomb.	
Highland Home.	Crenshaw.	20	54.8	- 2.4	79	11	29	28†	34	3.59	+ 0.47	3.13	T.	5	20	3	7	n.	Prof. Samuel Jordan.	
Livingston.	Sumter.	160	28	49.0	- 4.8	76	12	24	25†	40	0.86	- 1.99	0.60	0	2				Robert L. King.	
Lock No. 4.	Talladega.	510	15	49.6	- 2.5	82	1	22	25	41	0.62	- 1.49	0.50	1.2	3				U. S. Engineers.	
Maple Grove.	Cherokee.	19	46.6	- 4.0	78	11	19	28	45	0.54	- 2.47	0.44	0	2	16	12	2	nw.	Mrs. A. L. Awbrey.	
Mentone.	De Kalb.	1,595	5							0.85		0.44	1.0	3					E. Mason.	
Milstead.	Macon.	9								2.54		2.22	T.	4					W. U. Wall.	
Mobile.	Mobile.	84	40	56.9	- 0.6	76	21	33	28	28	3.91	+ 0.17	3.07	0	3	17	8	5	n.	U. S. Weather Bureau.
Montgomery.	Montgomery.	240	40	52.7	- 3.0	76	12	28	29	36	2.44	- 0.69	2.14	T.	3	20	3	7	n.	Do.
Newbern.	Hale.	20	51.3	- 4.3	79	12	25	25	43	0.45	- 2.07	0.24	2.0	3	21	2	7	n.	Dr. J. Huggins.	
Oneonta.	Blount.	857	18	47.0	- 3.5	77	11	18	29	47	1.26	- 1.39	0.86	3.0	4	22	0	8	n.	A. J. Ketchum.
Opelika.	Lee.	917	33	51.2	- 3.4	71	12	27	29	33	1.96	- 1.16	1.35	T.	4				A. H. Read, Jr.	
Ozark.	Dale.	400	10	50.4		76	12	32	27	30	4.40		4.10	T.	2				James A. Scott.	
Prattville.	Autauga.	281	12	49.6		76	12	22	29	41	1.85		1.60	T.	3	23	2	5	n.	Joseph B. Bell.
Pushmataha.	Choctaw.	21	50.7	- 4.5	79	12	23	29	40	1.92	- 0.89	1.20	T.	4	13	11	6	nw.	W. N. Horn.	
Robertsdale.	Baldwin.	148								3.10		2.62	0	4					Carl Bock.	
Selma.	Dallas.	147	32	56.5	+ 1.2	79	12	26	29	40	1.61	- 1.43	1.33	T.	3				Charles F. Brislin.	
Spring Hill.	Mobile.	312	8	56.3		78	10	29	28	32	3.87		2.00	0	4	24	4	2	n.	Spring Hill College.
Talladega.	Talladega.	554	22	48.6	- 4.7	77	11†	20	28†	44	0.50	- 2.43	0.30	2.0	2	20	6	4	n.	W. E. Henkel.
Tallassee.	Elmore.	21								2.18	- 0.64	1.63	T.	4					P. A. Noble.	
Thomasville.	Clarke.	385	21	55.2	- 0.4	82	17	21	29	47	0.45	- 2.15	0.25	T.	2				Miss H. T. Forster.	
Troy.	Pike.	581	4	55.0		79	11	27	29	36	4.93		3.75	2.0	6	17	9	4	nw.	F. L. Zimmermann.
Tuscaloosa.	Tuscaloosa.	230	31	48.7	- 4.2	78	12	25	29	44	2.31	- 2.09	0.59	T.	3				W. S. Wymann, Jr.	
Tuskegee.	Macon.	12	53.4	- 3.9	80	12	22	29	44	2.31	- 0.54	1.88	T.	3	16	10	4	n.	Prof. George W. Carver.	
Union Springs.	Bullock.	216	25	51.8	- 3.4	75	12†	27	29	37	3.43	+ 0.16	3.09	0.3	3				P. L. Cowan.	
Uniontown.	Perry.	273	26	54.7	- 1.3	86	10†	24	29	45	0.79	- 2.01	0.67	0.3	4	22	2	6	nw.	L. H. Moore.
Valley Head.	De Kalb.	1,031	27	45.4	- 3.5	76	11	18	25†	47	0.97	- 2.15	0.45	1.0	3	26	1	3	n.	M. T. Floyd, M. D.
Wetumpka.	Elmore.	205	20	53.6	- 2.5	86	12	24	29	44	1.43	- 1.51	1.25	T.	2				Mrs. Emmie Callaway.	
Mississippi.																				
Aberdeen.	Monroe.	210	24	48.8	- 2.2	78	10	21	25	45	1.93	- 1.12	0.92	T.	4	24	0	6	n.	L. D. Godfrey, Jr.
Agricultural College.	Oktibbeha.	424	22	51.2	- 2.8	79	11	24	29	42	1.00	- 1.97	0.50	1.0	3	23	5	2	n.	J. R. Ricks.
Bay St. Louis.	Hancock.	28	19	57.6	- 2.5	78	11†	30	28	34	3.73	+ 0.78	3.23	0	5	18	6	6	nw.	Brother Stanislaus.
Biloxi.	Harrison.	24	21	58.4	- 1.4	78	12	32	28	31	3.24	+ 0.29	2.84	0	3	18	6	6	nw.	Dr. D. T. Price.
Booneville.	Prentiss.	504	18	49.3	- 2.5	72	10†	24	24†	37	1.36	- 2.41	0.81	T.	5	22	6	2	n.	W. J. Bee.
Brookhaven.	Lincoln.	500	24	54.0	- 2.6	81	10	29	3	42	1.54	- 2.37	0.78	T.	6	16	5	9	n.	L. R. Drummond.
Columbia.	Marion.	110	8							1.38		0.54	T.	4	18	4	8	nw.	J. B. Love.	
Columbus.	Lowndes.	191	24	49.2	- 4.3	77	10	22	25	45	1.28	- 3.13	0.69	T.	4	18	4	2	n.	D. H. Miller.
Crystal Springs.	Copiah.	468	20	52.8	- 3.8	82	10	25	29	42	2.06	- 0.93	0.83	T.	5	24	2	4	n.	J. Y. Blocker.
Edinburg.	Leake.	4	49.7		78	10	22	25†	45	1.42		0.59	T.	4	24	2	4	n.	J. B. Thompson.	
Enterprise.	Clarke.	248	7							0.87		0.27	T.	4	18	0	12	n.	A. D. Graham.	
Fulton.	Itawamba.	3								0.85		0.35	T.	3	21	7	2	n.	T. C. Spence.	
Hattiesburg.	Forest.	189	19	52.8	- 4.8	78	22†	25	17	40	1.82	- 1.29	0.62	T.	4	20	0	10	n.	J. D. Granberry.
Hazlehurst.	Copiah.	460	22	53.6	- 3.3	83	13	27	29†	39	1.70	- 1.36	0.70	T.	6	14	5	11	n.	T. N. McMullen.
Hickory.	Newton.	326	2							1.06		0.38	0	4	17	4	9	n.	A. S. Nall.	
Jackson.	Hinds.	280	25	53.7	- 1.3	84	10	24	29	49	1.36	- 2.15	0.55	T.	6	20	1	9	nw.	Mrs. Eddie McNeel.
Lake.	Scott.	446	24	51.5	- 1.6	78	12	28	25	36	1.28	- 1.46	0.60	T.	3	20	1	9	n.	Thomas W. Flynt.
Laurel.	Jones.	241	8	54.1		85	22	25	29	44	0.85		0.44	T.	5	20	6	4	ne.	Dr. Sam Pool.
Leakesville.	Greene.	18	54.6†	- 3.7	85	12	23	29	48	1.88	- 1.13	1.50	0	3					B. T. Webster.	
Louisville.	Winston.	561	23	52.3	- 2.1	79	10†	25	25†	43	2.02	- 0.88	1.04	1.0	4				Prof. E. B. Ferris.	
McNeill.	Pearl River.	230	9	56.3		80	11	30	28†	38	1.50		1.00	0	5	20	7	3	nw.	Finis E. Carleton



TABLE 2.—Daily precipitation for November, 1912. District No. 2, South Atlantic and East Gulf States.

Stations.	Watershed.	Day of month.																														Total.			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
Virginia.																																			
Arvonla.....	James.....	.38					T.	2.13	T.	.01					.18																		2.88		
Ashland.....	do.....							1.50																									1.75		
Buchanan   ..	do.....	.13	.08				T.	1.48	.28					.53																			2.63		
Callaville....	Chowan.....		.37					1.00																									1.79		
Cape Henry....	Coast.....	.45		T.			.05	.90							.13																		1.72		
Catawba.....	Roanoke....	.02					.25	2.10							.35	T.									T.								2.87		
Charlottesville	James.....	.37					T.	2.95																							10		3.42		
Clarksville	Roanoke....		.40					1.45	.44																								2.31		
Columbia.....	James.....	.40						2.30						.21																			3.11		
Danville   ....	Roanoke....	.12	.22				T.	1.60	1.76																								3.97		
Diamond Springs	Coast.....		.50					.77							.17																		2.14		
Dry Bridge....	James.....	.05					1.13	.80							.71																		2.15		
Hampton.....	Coast.....	.25						.80																										1.55	
Hot Springs....	James.....	.28					*	2.02	.04							T.																	2.41		
Ivor.....	Chowan.....		.30					2.00	.40						.25																		3.20		
Lassiter.....	James.....							1.57					.31																				2.33		
Lexington.....	do.....	.04					1.27	.43	T.					.41																			2.18		
Lynchburg....	do.....	.30					.00	1.90						.33											T.								2.72		
Newport News..	Coast.....	.20	.15					1.08							.33																			2.44	
Norfolk.....	do.....	.31					T.	.69							.19																			1.96	
Randolph   ..	Roanoke....		.90					1.71	.88																									3.62	
Richmond.....	James.....	.49						.79						.03	.17																			1.73	
Roanoke.....	Roanoke....	.08						10	1.69					.20		T.																		2.29	
Rocky Mount..	do.....	.30						26	1.70						.44																	10		2.80	
Ruckersville..	James.....	.33					.04	2.12							.27																			2.90	
Spottsville (near)	Chowan.....	.11						1.98							.17																			2.51	
Williamsburg..	James.....		.10					1.10							.10																			1.50	
North Carolina.																																			
Albemarle.....	Pedee.....	.10					.07	2.50																										3.12	
Beaufort.....	Coast.....	.09	.28					1.00	.02						.15								10	.02										2.51	
Belhaven.....	Pungo.....							.75																										0.95	
Caroleen.....	Santee.....	.59					.20	2.50						.03																				3.67	
Chalybeate Springs	Cape Fear..	.01	.11				.05	1.58							.21																			2.60	
Chapel Hill...	do.....	T.	.31				.10	1.34							.03																			2.00	
Charlotte.....	Santee.....	.04					.47	1.15						.04																				1.90	
Chimney Rock..	do.....	.50					.80	1.25																										2.70	
Durham (near)...	Neuse.....	.41						1.76																										2.58	
Eagletown.....	Chowan.....	T.	.28					1.37							.15																			2.50	
Edenton.....	Coast.....	.80						.20						.60																				2.10	
Elizabeth City..	Pasquotank	T.					T.	1.20							.15																			2.15	
Elizabethtown	Cape Fear..														.15																			1.40	
Enfield (near)	Tar.....						*	1.12							.24																			1.88	
Fayetteville	Cape Fear..		.25				T.	.35	1.85						.25																			2.94	
Globe (near)...	Santee.....	.35					.67	1.62						.25																				2.99	
Goldsboro   ..	Neuse.....	T.	.08					.34	.35						.05	.12																		1.79	
Gorge (near)...	Santee.....	.41					.48	1.58																										2.67	
Graham   ....	Cape Fear..		.21				.08	2.40	.53																									3.63	
Greensboro   ..	do.....							1.77	1.72																									3.91	
Greenville   ..	Tar.....		.06					.06	.91						.07	.12																		2.20	
Hatteras.....	Coast.....	.09	.35					.27	1.63																									3.04	
Henderson.....	Tar & Roanoke	.34						1.32								.06																		2.45	
Kinston.....	Neuse.....	.18	.11					.95																											1.59
Lincolnton.....	Santee.....	.40						1.85						.08																				2.59	
Louisburg   ..	Tar.....		T.					.53	.87						.09																			1.76	
Lumberton   ..	Lumber.....		.40				.03	.81	.03						.02	.03																		2.17	
Manteo.....	Coast.....		.02	.20			.16	.94							.08																			2.68	
Marion.....	Santee.....	.41					.83	1.86						.01																				2.87	
Middletown....	Coast.....	.17	.23				.15	1.02	.02						.16																			2.60	
Moncure   ....	Cape Fear..		.15				.19	1.20	.50						.14																			3.93	
Monroe.....	Pedee.....	.58						10	2.75																									2.89	
Morganton.....	Santee.....	.51						35	1.68																									3.11	
Mount Airy....	Pedee.....	.76					.28	1.76							.11																			2.06	
Mount Holly	Santee.....	.20	T.					1.43	.08						.08																			2.47	
Nashville   ..	Tar.....	T.					T.	.03	1.58						.21																			2.20	
Neuse   ....	Neuse.....		.10					.85	.61						.13																			1.96	
Newbern   ....	do.....		.36					.32	.35																									3.20	
North Wilkesboro	Pedee.....	.76					.58	1.40																										1.90	
(near).....																																		2.98	
Parkersburg....	Cape Fear..	T.	.20				T.	.80							.16																			2.70	
Pinehurst.....	Lumber.....	.08						1.95																										2.35	
Pittsboro.....	Cape Fear..						2.20	.20																										2.68	
Raleigh.....	Neuse.....	.04					T.	1.66							.22																			2.30	
Ramseur.....	Cape Fear..	.01					.07	2.35						.03																					



TABLE 2.—Daily precipitation for November, 1912. District No. 2—Continued.

Stations.	Watershed.	Day of month.																														Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
South Carolina—Con.																																
Beaufort.....	Coast.....						.33															.14							.58		1.05	
Blackville	Edisto.....	.01	.15				1.60																								2.26	
Blairs	Broad.....	.04					3.70																								4.14	
Bowman.....	Edisto.....						.35																								0.63	
Broxton	Salkehatchie.....						1.90																								2.54	
Calhoun Falls	Savannah.....	.39					762.54																								3.89	
Camden	Watauga.....		.30				1.50	.10																							2.28	
Catawba	Catawba.....						3.50	.04							.10																4.05	
Chappells	Saluda.....	.23					3.02																								4.05	
Charleston.....	Coast.....	.05				.02	.55	.11														T.						.22			1.35	
Cheraw	Pedee.....		.43				.03	1.00	.32						.02																2.64	
Clemson College.....	Savannah.....	.75					.84	1.50							.43																4.02	
Columbia.....	Congaree.....	.10					1.20	.55							.04													.19			2.41	
Conway	Waccamaw.....	T.					.98	.25																							1.78	
Dillon.....	Little Pedee.....	.05													.01																0.88	
Edisto	Edisto.....		.09				.06	.80																							1.03	
Effingham	Lynches.....						.40																								0.50	
Ferguson	Santee.....		.04				.23																								0.97	
Georgetown.....	Coast.....	T.					1.02	.97																							1.99	
Greenville	Saluda.....	.40					2.54								.16																3.62	
Greenwood	do.....	.25					2.58																								3.03	
Heath Springs.....	Watauga.....		.07				3.78								.08																4.13	
Kingstree	Black.....		.12				.62																								1.44	
Liberty.....	Savannah.....	.70					.80	1.10							.35																3.45	
Little Mountain.....	Saluda.....						355.50																								6.35	
Meriwether.....	Savannah.....	.02					323.76																								4.66	
Monetta.....	Edisto.....	.10					.01	2.90																							3.50	
Newberry.....	Saluda.....	.10					.02	4.55							.05																5.32	
Pelzer	do.....	.70					.92	2.40							.30																4.57	
St. George	Edisto.....		.13																												0.93	
St. Matthews	Santee.....						1.35																								1.95	
Saluda.....	Saluda.....	.21					3.70																								4.61	
Santee.....	Broad.....	.10					.11	2.57							.18																3.36	
Smiths Mills	Pedee.....		.04				T.	.52	.11																						0.85	
Society Hill.....	do.....	.42					.72	.07							.14																1.68	
Spartanburg	Broad.....	.62					.03	2.90	.03						.12																4.00	
Summerville.....	Ashley.....	.03				T.	.23	.22														T.	.02								1.19	
Trenton.....	Edisto.....	.12					.60	4.15																							5.44	
Walterboro.....	Ashepoo.....	.05					.10	.35																							1.15	
Winnsboro.....	Broad.....					.50		.73							T.																1.43	
Winthrop College.....	Catawba.....						1.80																								2.00	
Yemassee	Combahsee.....	.02	.08				.75	T.															T.								1.32	
Georgia.																																
Abbeville	Ocmulgee.....	.76	T.				1.25								.04								T.							.31	2.36	
Adairsville.....	Coosa.....	.45					T.	.95							.27															.30	1.97	
Albany	Flint.....	.15					T.	2.10							T.																2.79	
Allapaha	Allapaha.....	.16					1.30																.02								1.84	
Athens	Oconee.....	.33					.02	1.05							T.																1.75	
Atlanta.....	Chattahoochee.....	.18				T.	.35	.29						.01																	1.05	
Augusta.....	Savannah.....	.06					1.28	1.56																							3.54	
Bainbridge	Flint.....	.26					2.15								T.																3.08	
Butler	do.....	.20					1.62																								2.80	
Camak	Savannah.....	T.	.25				4.08								T.																5.13	
Canton	Coosa.....	.27	T.				T.	1.02							.24																1.64	
Carlton	Savannah.....	.45	.10				1.50								.10																2.63	
Clayton.....	do.....	1.33					1.25	.35						.08																	3.21	
Columbus	Chattahoochee.....	.03					1.16																								1.54	
Concord	Flint.....	.12					1.03																								2.15	
Covington	Ocmulgee.....	.40					1.00								.30																1.90	
Dahlonega.....	Chattahoochee.....	.32					.46	.86																							2.44	
Diamond.....	Tennessee.....	.43					.13	1.08						.68																	2.69	
Dublin	Oconee.....	.42	.04				.24	1.32							.04																2.39	
Eastman	Ocmulgee.....	.62	.04				.03	1.32																							2.88	
Eatonton.....	Oconee.....	.45					.15	1.63							.10																3.20	
Elberton.....	Savannah.....	.52					.53	1.77							.08																1.47	
Experiment.....	Ocmulgee.....	.40					.12	.60																							4.85	
Fort Gaines	Chattahoochee.....	T.					4.65																								1	



TABLE 2.—Daily precipitation for November, 1912. District No. 2—Continued.

Stations.	Watershed.	Day of month.																														Total.		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
Georgia—Continued.																																		
Thomasville	Ocklocknee	.51					2.49	.34						T.								T.							.44	.01			3.79	
Toecoa	Savannah	.80					.10	.85							.40															.16			2.31	
Valdosta	Suwanee	.20						1.65																						.35			2.20	
Valona	Coast						.95																							.20		.21	1.36	
Washington	Savannah	.21					.20	1.42							.05															.10			1.98	
Waycross	Satilla	.33	.36				.08	.91															.05							.34			2.07	
Waynesboro	Savannah							1.40																						.10			1.50	
West Point	Chattahoochee	.14					T.	1.05																						.30			1.49	
Woodbury	Flint							1.05																						.48			1.53	
Florida.																																		
Apalachicola	Coast						4.80						.73																	.23			5.76	
Arcadia	Peace Creek	.06	.51																			.53			.07					.03			1.13	
Avon Park	Kissimmee					.03		.21														.93								.03			1.27	
Bartow	Peace Creek	.02	.20			.01		.33	.01													.40	.57	.10						.06			1.70	
Blountstown	Apalachicola						2.83								.38							2.30	.53							.55			3.76	
Brooksville	Withlacoochee						1.21																							.20			4.04	
Carrabelle	Coast	.10					5.20	1.10							.95							1.60	.05							.10	.19		7.55	
Cedar Keys	do.	.34													.07							.45	1.25							.15			2.35	
Clermont	Lake	T.					.65																		T.						1.10		2.50	
DeFuniak Springs	Choctawhatchee						2.58								.67							2.10	.18							.04			4.35	
De Land	St. Johns						.05																							.10			2.37	
Eustis	Lake	.01					.35	.03														.43								.21	.16		1.99	
Federal Point	St. Johns					.07	.09	.51	.03													.05											1.47	
Fenholloway	Fenholloway	.39					1.76																.88	.02									2.20	
Fernandina	Coast	.06			.04		.34	.21		.04			T.		1.30	T.			.01	T.		.10	2.76	.02								T.	1.86	
Fort Lauderdale	do.		.07				.10	.10	.04													1.50	.10										4.50	
Fort Meade	Peace Creek																					.43	.05										1.66	
Fort Myers	Caloosahatchee	.84						T.								T.	T.	T.															1.32	
Fort Pierce	Indian					.10		.50															.90	.10									1.60	
Gainesville	Lake							.27										.28													.15		.01	1.33
Garniers (near)	Coast						6.02															1.53	.06							.08			6.62	
Grasmere	Lake	.29						.34															.30										2.30	
Hilliard	Nassau					.10	.20	.40														(.)								.01	.03		1.00	
Homestead	Coast			.02	.01													.15	.20														11.42	
Hypoluxo	Lake	.33	.07				.14	.15									.24						.95	.25									2.13	
Inverness	Withlacoochee	.78					.51															46.20								.17			3.92	
Jacksonville	St. Johns	.07			T.	.06	.12	.01														.31	.04							.11	.10	T.	0.82	
Jasper	Suwanee	.15					T.	.40	.60													.20	.10									T.	1.45	
Johnstown	do.	.40						.25														.37	.05										1.27	
Key West	Coast	.78			T.		T.	T.					T.									.27	.09	.03								T.	1.17	
Kissimmee	Kissimmee							.96														1.95	.10										3.01	
Lake City	Suwanee	.60					.09	.20															.08	.05									1.02	
Lucerne Park	Peace Creek	.12				.04		1.39														1.50	.18										3.45	
Macclenny	St. Marys	.15																				.31	.05										0.58	
Madison	Suwanee	.06	.27				T.	2.13							.05								T.								.12		2.63	
Malabar	Indian	.08				.09		.55														1.80	.05								.05		2.62	
Marianna	Apalachicola	.33					T.	3.32							.03																.56		4.24	
Merritts Island	Indian	.67					T.	.01	.04													1.92	.11								T.	T.	2.75	
Miami	Coast	.30					T.	.85						1.69	.08							7.68	.06									.01	10.67	
Middleburg	St. John					.10		.34														.19			.09						.19		0.91	
Molno	Escambia																													.20			3.60	
Monticello	Aucilla						2.90																										3.10	
Mount Pleasant	Apalachicola	.28					2.35																							.22	.50		3.35	
Newport	St. Marks	2.00					4.00																										6.41	
New Smyrna	Coast									T.													.10	2.30	.04								2.44	
Observation Island	Caloosahatchee	.30																				.42											0.72	
Ocala	St. Johns						1.77															1.99	.05							.05			3.93	
Orange City	do.				.04		.09															2.00	.15								.07		2.32	
Orlando	do.	.05				T.		.25														1.30	.13								.07		T.	1.80
Pensacola	Coast						3.30																										3.75	
Pineas Park	do.							1.40														3.03											4.43	
Plant City	Hillsboro						1.10															1.45	.10										2.65	
Rockwell	Withlacoochee																																	



TABLE 2.—Daily precipitation for November, 1912. District No. 2—Continued.

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Alabama—Con.																																	
Goodwater	Coosa							.90							.40														.10			1.40	
Greensboro	Black Warrior						.50							.27														.19			0.96		
Greenville	Escambia				T.		.63																						.21			0.84	
Hamilton	Tombigbee	.24					.23								.54														.12			1.13	
Healing Springs	do.						.52	.30					T.										T.						.10			0.92	
Highland Home	Escambia	.28					2.71	.42						T.														.08	.10			3.59	
Livingston	Tombigbee							.60							.26																	0.86	
Lock No. 4	Coosa						.22	.28																					.12			0.62	
Maple Grove	do.						.44					T.	T.															.10				0.54	
Mentone	Coosa	.30						.44																					.11			0.85	
Milstead	Tallapoosa	.12				.32	1.90																						.20			2.54	
Mobile	Coast	T.					3.07							.47										T.					.37			3.91	
Montgomery	Alabama	T.					2.13	.01																					.30			3.91	
Newbern	Black Warrior						.17								.04														.24			2.44	
Oneonta	do.						.05	.81						.10															.30			1.26	
Opelika	Tallapoosa	.07					T.	1.35							.09															.45			1.96
Ozark	Coast							4.10																						.30			4.40
Prattville	Alabama						1.60	.05																					.20			1.85	
Pushmataha	Tombigbee	.31					1.20								.23														.18			1.92	
Robertsdale	Coast				2.00	.02								T.	T.														.41	.07		3.10	
Selma	Alabama						.27	1.06																						.28			1.61
Springhill	Coast						2.00	.63							.84															.40			3.87
Talladega	Coosa						.30							T.															.20			0.50	
Tallassee	Tallapoosa	.12					.25	1.48																						.33			2.18
Thomasville	Tombigbee						.25																							.20			0.45
Troy	Escambia	.30					3.75	.28						.21														.19	.20			4.93	
Tuscaloosa	Black Warrior	T.						.59						.10																.14			0.83
Tuskegee	Tallapoosa	.15					1.88																							.28			2.31
Union Springs	do.	.09						3.09															T.							.25			3.43
Uniontown	Black Warrior						.67	.03						.06															.03				0.79
Valley Head	Coosa	.30					.45							T.																.22			0.97
Wetumpka	do.						.18	1.25																						T.			1.43
Mississippi.																																	
Aberdeen	Tombigbee	.22						.62						.92															.17			1.93	
Agricultural College	do.						.50							.25															.25			1.00	
Bay St. Louis	Coast						14.3	.09						.13							.02								.35			3.73	
Biloxi	do.						.07	2.77																					.40			3.24	
Booneville	Tombigbee	.81					.34						.03	.10															.08			1.36	
Brookhaven	Pearl	.45						.03						.78								.03		.15						.10			1.54
Columbia	do.	.42					.05	.03						.54									T.	T.						.12			1.38
Columbus	Tombigbee	.32						.69					T.	.16								.22								.11			1.28
Crystal Springs	Pearl	.83					.05	.54						.48																.16			2.06
Edinburg	do.	.19					.59						T.	.41															.23			1.42	
Enterprise	Chickasawhay	.17						.25						.27																.18			0.87
Fulton	Tombigbee						.35								.32														.18			0.85	
Hattiesburg	Leaf	.62					.48							.58																.14			1.82
Hazlehurst	Pearl	.70					.05	.31						.48								.02								.14			1.70
Hickory	Chickasawhay	.31					.17							.38															.20			1.06	
Jackson	Pearl	.55					.08						.02	.52							T.	.02	T.						.17			1.36	
Lake	do.	.60						.20						.48																T.			1.28
Laurel	Leaf	.10				T.	.44							.22											.01				.08				0.85
Leakesville	Chickasawhay						.90	.60																						.38			1.88
Louisville	Pearl	.46					.28																						.24			2.02	
McNeill	do.						.08	1.00						.11									.15						.16			1.50	
Macon	Tombigbee	.68						.40	T.					.58																.18			1.84
Magnolia	Pearl						.13	.01					T.	.54								.07			.01				.06			0.82	
Meridian	Chickasawhay	.01					.10	T.							.10														.10			0.31	
Merrill	Pascagoula						.54	.90						.18	.08											T.				.16			1.86
Monticello	Pearl	.47					.10	.61						.55								T.				.12				.14			2.04
Okolona	Tombigbee	.20						.40																						.22			0.82
Pascagoula	Coast	.07					2.76																						.39			3.22	
Pearlington	Pearl						.05	2.05														T.								.56			2.66
Shubuta	Chickasawhay						.36	1.20						.15																.02			1.73
Tupelo	Tombigbee	.17					.35							.03															.17			0.72	
Waynesboro	Chickasawhay	.15					.52	1.58						.20															T.	.20		2.65	
Woodland	Tombigbee													.15															.20			0.35	

\* Precipitation included in that of the next measurement.  
† Separate dates of falls not recorded.  
‡ Precipitation for the 24 hours ending on the morning when it is measured.  
T. Precipitation is less than 0.01 inch rain or melted snow.



TABLE 3.—Maximum and minimum temperatures at selected stations for November, 1912. District No. 2, South Atlantic and East Gulf States.

Date.	Virginia.										North Carolina.																			
	Callaville.		Hot Springs.		Lynchburg.		Norfolk.		Richmond.		Charlotte.		Edenton.		Fayetteville.		Hatteras.		New bern. §§		Raleigh.		Reidsville.		Salisbury.		Wilmington.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1....	76	51	64	41	72	48	75	55	75	49	74	52	82	55	76	58	75	68	76	46	75	54	77	54	80	61	76	65		
2....	59	45	48	28	48	33	55	41	53	35	52	34	72	45	66	44	70	49	56	44	54	35	64	42	76	40	67	43		
3....	52	28	42	26	51	32	48	38	50	28	50	28	69	36	54	31	52	46	52	30	49	31	53	27	55	25	52	35		
4....	61	22	53	20	56	25	60	38	57	28	58	34	65	36	65	27	59	46	69	25	60	33	60	29	59	23	63	37		
5....	71	32	60	21	70	33	69	47	70	38	71	41	72	49	76	34	71	53	76	37	70	39	72	34	63	33	71	48		
6....	77	42	57	40	66	45	75	55	75	46	67	56	76	48	76	55	72	62	82	46	73	55	70	46	65	39	73	59		
7....	71	61	59	40	70	58	73	61	69	59	70	54	70	55	77	57	73	64	72	57	70	59	72	58	70	45	75	62		
8....	66	47	57	36	66	49	64	53	64	49	67	49	66	45	70	50	69	59	73	45	65	50	67	41	76	47	68	53		
9....	58	39	52	32	52	38	57	46	55	43	66	47	59	40	65	43	61	51	67	52	59	48	59	44	75	40	64	46		
10....	63	28	59	34	64	33	58	43	60	34	65	43	60	42	69	35	60	49	79	30	65	37	69	37	75	42	66	40		
11....	75	39	68	32	76	41	73	45	75	40	77	48	72	45	81	43	67	53	82	36	77	45	76	42	80	33	76	49		
12....	80	45	68	31	79	41	77	52	78	42	77	51	70	49	86	47	69	57	83	39	79	52	73	44	80	47	78	52		
13....	74	41	72	50	70	45	76	54	74	47	70	54	76	51	77	49	70	57	75	41	73	54	72	56	81	45	75	55		
14....	68	52	66	38	58	45	67	51	58	43	60	44	65	46	69	53	72	55	72	43	64	46	64	51	67	50	72	52		
15....	52	34	47	30	45	35	51	41	48	36	50	35	64	44	54	34	58	46	58	34	48	36	51	38	58	30	54	40		
16....	53	36	45	30	56	32	49	39	51	32	57	29	50	31	56	30	53	43	66	26	52	32	57	26	59	26	54	32		
17....	60	24	41	33	53	30	54	35	56	29	61	32	60	27	66	29	56	41	70	23	59	33	59	34	65	27	62	33		
18....	55	27	64	33	55	27	51	34	52	32	62	32	54	28	63	28	56	44	64	26	57	36	59	32	66	25	59	34		
19....	63	21	42	20	65	27	60	35	62	30	63	37	60	26	69	29	60	42	71	24	63	38	65	32	64	30	65	40		
20....	69	41	55	24	71	41	67	44	68	42	70	34	68	40	74	34	64	49	67	30	70	42	71	39	74	30	72	41		
21....	71	31	60	21	69	32	72	46	70	35	60	40	69	35	72	33	67	47	69	30	70	43	67	39	64	30	68	40		
22....	69	35	60	35	69	40	68	47	66	39	62	38	70	44	69	40	65	50	72	38	68	46	72	37	62	37	73	51		
23....	61	38	54	25	58	35	58	47	60	43	64	45	60	42	69	43	63	50	67	40	62	50	60	42	65	33	68	45		
24....	53	40	49	35	46	34	53	38	51	35	51	35	55	41	65	40	63	48	63	39	51	37	53	36	69	35	56	40		
25....	52	33	45	25	46	33	51	35	51	32	53	31	51	36	53	33	50	44	63	27	50	32	52	33	53	32	52	36		
26....	51	25	40	25	50	31	52	34	50	28	52	30	51	30	57	28	56	40	65	24	52	32	52	26	54	25	60	38		
27....	53	18	37	22	48	28	52	35	52	26	49	32	53	26	55	30	55	45	63	26	52	34	53	27	53	24	56	35		
28....	39	25	40	20	38	30	47	31	42	29	39	29	44	27	44	32	49	36	43	27	44	30	44	31	50	25	42	32		
29....	45	13	44	12	48	23	45	29	44	20	47	26	43	27	50	23	50	36	47	20	46	25	48	22	48	20	54	29		
30....	61	31	50	24	59	30	53	34	55	31	57	31	55	36	63	26	53	43	68	21	58	34	59	29	61	25	57	34		
Mns.	61.9	34.5	53.3	29.4	59.1	35.8	60.3	42.8	59.7	36.7	60.7	39.0	62.7	39.4	66.2	37.9	61.9	49.1	67.7	34.2	61.2	40.6	62.3	37.6	65.6	34.1	64.3	43.2		

Date.	South Carolina.										Georgia.																	
	Charleston.		Columbia.		Conway. §§		Ferguson. §§		Georgetown.		Green-ville. §§		New-berry.		Society Hill.		Albany. §§		Atlanta.		Augusta.		Dahlo-nega.		Macon.		Rover. §§	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	81	67	75	58	82	59	73	59	80	65	71	59	78	65	75	52	80	65	66	43	75	54	64	47	75	46	62	47
2....	67	47	58	41	63	59	57	50	78	43	54	41	68	48	57	35	62	48	47	33	58	45	51	40	56	39	50	38
3....	53	38	52	33	60	33	53	39	54	33	52	26	52	30	52	32	59	35	52	28	54	35	49	26	53	33	56	28
4....	64	43	63	30	74	28	67	30	70	36	59	24	63	27	62	41	72	38	61	36	66	31	55	29	65	33	62	28
5....	72	56	74	45	82	42	74	35	73	50	70	34	72	42	75	54	76	45	66	47	73	52	63	37	74	55	65	28
6....	71	62	69	59	83	56	73	45	78	60	62	44	79	67	76	47	70	58	63	57	71	59	59	54	67	61	64	42
7....	79	61	74	59	84	65	79	61	82	64	70	52	75	60	74	53	73	62	61	47	71	57	62	54	68	52	65	55
8....	70	56	70	49	73	50	72	50	76	52	69	40	70	45	70	49	71	44	65	42	70	49	66	42	70	45	71	40
9....	69	51	67	44	75	37	79	42	76	46	68	34	67	39	67	39	72	44	63	44	68	47	62	47	67	44	67	36
10....	65	50	70	40	74	35	71	36	66	38	71	32	70	35	69	44	74	39	71	48	72	40	69	36	72	38	75	33
11....	75	53	78	46	82	34	78	40	82	43	75	35	76	40	80	50	74	43	73	53	78	42	73	34	76	39	77	36
12....	77	56	78	52	83	43	79	42	84	58	76	40	77	42	80	56	75	49	73	56	78	46	72	41	76	45	77	37
13....	77	59	75	56	82	45	76	52	80	56	66	46	75	50	76	60	78	50	67	47	75	53	64	51	74	52	70	40
14....	72	52	65	46	78	62	75	53	72	48	62	40	65	48	66	42	66	47	56	41	65	46	59	40	62	45	62	39
15....	58	45	54	37	63	37	56	40	67	42	58	33	55	37	55	35	59	40	52	35	56	37	52	33	56	35	55	32
16....	54	38	57	30	69	30	54	35	66	32	67	27	59	28	55	33	64	35	58	35	57	32	59	24	58	32	60	26
17....	60	39	64	32	65	38	63	27	62	29	69	22	66	29	65	32	65	33	61	38	64	31	61	33	67	29	62	26
18....	65	43	66	30	67	25	66	28	63	30	65	24	66	26	67	37	67	35	61	36	68	32	61	29				



TABLE 3.—Maximum and minimum temperatures at selected stations for November, 1912. District No. 2—Continued.

Date.	Georgia.								Florida.																			
	Savannah.		Thomasville.		Waycross. §§		West Point. §§		Avon Park.		Fort Myers.		Gainesville. §§		Jacksonville.		Key West.		Miami.		Ocala.		Orlando.		Pensacola.		Tallahassee. §§	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	79	63	83	51	78	64	69	55	88	69	81	61	87	69	84	64	84	77	88	72	87	70	86	70	74	49	79	65
2.....	63	47	58	41	60	47	55	40	76	58	75	67	60	50	64	48	81	69	83	60	77	49	76	55	55	40	57	47
3.....	55	37	59	35	60	37	57	30	64	49	68	51	64	39	56	44	71	63	74	54	60	43	66	49	59	38	60	36
4.....	65	40	72	38	70	36	68	31	72	54	78	55	76	45	74	46	77	68	77	73	75	47	77	53	66	51	70	41
5.....	71	54	77	56	79	48	72	39	74	62	82	63	80	52	75	61	82	71	82	74	80	60	79	63	71	60	76	58
6.....																												
7.....	72	62	70	62	74	52	62	51	84	65	82	66	79	64	75	64	83	73	83	76	80	60	82	64	72	62	70	64
8.....	76	58	74	52	76	66	62	56	81	70	80	75	76	67	75	59	82	75	82	66	76	62	79	70	70	53	70	62
9.....	71	52	71	46	74	49	71	40	73	55	77	61	73	50	72	53	75	69	74	61	70	53	72	54	72	50	68	47
10.....	70	52	71	43	74	49	69	38	75	56	76	59	74	58	70	53	77	68	78	62	73	46	73	53	73	55	69	52
11.....	72	50	75	39	77	37	73	37	75	56	79	60	77	44	73	49	77	71	76	72	77	45	77	51	68	53	70	54
12.....	78	57	78	44	80	42	79	37	81	59	80	61	80	54	78	55	78	70	78	72	78	52	78	54	71	56	73	52
13.....	79	57	80	50	83	47	76	43	82	60	79	61	81	56	78	55	78	71	79	73	79	54	79	55	73	67	74	55
14.....	77	56	79	53	80	49	71	47	84	59	81	62	82	58	79	61	80	71	79	67	80	54	80	56	74	54	75	58
15.....	68	53	66	44	70	39	64	44	82	60	78	66	74	57	72	53	80	71	82	65	77	57	80	59	67	46	64	54
16.....	59	44	59	36	63	38	60	35	74	56	70	60	66	42	63	47	73	67	77	60	65	42	74	53	64	46	59	45
17.....	57	37	60	32	60	35	63	28	73	53	74	54	64	40	59	44	75	66	74	58	65	41	74	50	63	40	56	38
18.....	63	41	67	32	70	31	67	28	75	54	73	56	72	46	69	46	72	68	76	71	70	45	70	54	68	43	63	45
19.....	68	42	68	35	71	30	69	28	76	55	74	56	73	45	67	45	74	68	75	70	72	51	74	53	67	44	65	42
20.....	70	45	72	32	73	29	69	26	74	54	76	56	74	42	70	44	75	69	75	70	73	44	73	50	67	50	66	43
21.....	70	50	67	39	73	35	68	26	79	56	78	56	70	45	72	49	78	69	77	71	72	46	76	52	68	56	66	46
22.....	65	51	72	53	64	42	75	35	73	63	76	65	65	50	67	60	80	71	74	70	64	58	69	63	70	58	70	50
23.....	73	51	74	54	77	53	71	43	78	61	77	65	76	58	73	59	78	71	79	68	73	63	73	63	73	55	72	54
24.....	71	51	73	50	70	49	75	45	81	59	77	63	76	55	74	57	75	69	77	64	75	56	76	66	72	56	70	54
25.....	59	45	66	37	65	33	63	35	78	54	77	57	70	53	67	47	77	71	79	60	69	53	73	54	63	44	64	47
26.....	56	38	58	29	59	29	67	26	67	48	68	51	61	35	59	39	72	67	73	56	61	36	63	46	55	39	56	35
27.....	60	42	62	32	64	31	58	28	69	47	68	50	61	32	64	42	72	65	77	54	65	34	65	42	60	42	60	40
28.....	59	40	59	32	63	31	47	27	75	49	75	50	64	36	63	44	75	66	76	58	65	39	69	40	56	36	57	42
29.....	47	36	48	28	50	34	52	27	69	46	65	50	50	35	51	37	75	58	72	52	55	36	63	42	50	31	47	32
30.....	55	33	60	26	62	27	67	21	72	47	72	45	64	35	57	38	70	60	72	65	65	35	70	46	55	38	60	34
Mns.....	59	47	64	46	63	41	59	27	73	58	76	60	70	41	66	49	77	67	77	71	72	50	73	56	65	47	68	36

Date.	Alabama.																Mississippi.									
	Tampa, Fla.		Anniston.		Bermuda.		Birmingham.		Eufaula. §§		Mobile.		Montgomery.		Tuscaloosa. §§		Uniontown.		Columbus. §§		Hattiesburg. §§		Jackson.		Meridian.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	83	71	68	45	75	53	67	44	71	55	71	49	67	47	60	50	69	52	55	54	67	52	73	46	62	43
2.....	73	52	47	29	53	40	47	34	54	39	55	42	52	39	53	36	70	36	50	34	48	28	54	34	51	36
3.....	67	48	58	25	59	32	57	27	55	29	58	36	57	32	58	27	65	28	61	26	62	28	65	26	56	29
4.....	78	50	66	40	71	34	64	42	64	32	70	48	65	37	65	28	67	29	66	28	60	34	74	30	67	31
5.....	80	65	69	50	78	47	69	52	72	38	71	58	74	53	71	42	73	40	71	35	72	37	74	51	72	53
6.....	81	65	65	59	64	60	65	57	64	54	67	60	64	60	67	46	72	44	64	53	72	47	73	61	63	56
7.....	76	65	59	43	63	53	57	44	65	55	70	53	61	50	60	53	79	48	65	51	71	42	71	54	64	48
8.....	71	59	69	36	69	40	68	38	66	42	72	48	71	45	68	38	82	49	74	37	76	52	78	36	70	39
9.....	75	54	67	35	71	41	67	43	66	42	74	50	72	47	68	39	84	48	74	37	72	41	80	38	71	41
10.....	78	55	76	35	76	38	75	43	66	36	74	48	75	44	73	38	86	43	77	36	67	38	84	38	77	38
11.....	79	59	76	38	78	39	75	52	70	37	50	75	76	44	74	38	86	41	76	43	72	42	80	42	76	45
12.....	80	60	75	45	79	50	75	56	73	40	75	62	76	52	78	41	85	42	76	46	70	50	79	61	78	59
13.....	80	61	68	49	74	61	64	48	72	45	75	53	72	50	63	38	78	44	61	52	70	45	71	49	68	46
14.....	80	62	61	37	66	42	63	40	62	43	67	47	65	46	62	38	69	42	69	35	70	52	74	34	67	38
15.....	69	51	56	30	60	37	56	32	57	35	63	46	60	38	52	35	66	35	61	31	46	28	65	38	58	35
16.....	70	49	60	24	64	30	60	30	59	27	64	41	62	32	63	29	67	31	63	26	63	28	66	28	60	29
17.....	73	53	64	29	68	30	63	33	65	29	67	40	67	34	63	30	68	33	63	27	48	25	67	29	63	30
18.....	74	53	65	24	69	32	66	29	64	29	67	43	68	36	65	27	70	35	68	27	52	28	64	29	64	32
19.....	75	53	66	24	71	32	69	38	63	27	70	42	70	34	66	27	72	35	71	26	68	30	76	27	68	30
20.....	75	56	68	28	69	40	69	42	63	30	73	54	67	36												



## CLIMATOLOGICAL DATA FOR NOVEMBER, 1912.

## DISTRICT NO. 3, OHIO VALLEY.

PROF. FERDINAND J. WALZ, District Editor.

## GENERAL SUMMARY.

Pleasant weather, which prevailed throughout October, continued during the greater portion of November, thus making a fall season favorable for gathering crops and all outdoor activities of six weeks or more in length. Sunshine was abundant and much above the normal, and there were very few rainy and no severely stormy days.

Average temperature was above normal over the northern half, but below normal over the southern half of the district, while precipitation was deficient and light in all sections. In many extended localities this shortage, following that of October, caused the growth of wheat to be much retarded from want of sufficient moisture, and while the clear dry weather was ideal for gathering corn, it prevented the stripping of tobacco and the preparation of that crop for market. Also there was a scarcity of stock water in some sections, particularly in Kentucky.

Extremes of temperature were well within the records of those experienced in previous years in November, except that 1° at Mountain City, Tenn., and 2° at two stations in West Virginia on the 29th are the November minimum temperature records for those States. A noteworthy feature in temperature distribution was the fact that the lowest registrations were made in the southern Appalachian section rather than in the more northerly and westerly parts of the district.

Snowstorms were less numerous than usual and the fall was much under normal. No snow of consequence fell until the 24th, and then not sufficient in quantity to cover the ground save over a few limited areas in Ohio and West Virginia.

The month was remarkably free from storms common to November, only three barometric disturbances crossing the Ohio Valley which were in any way extensive or potent. These occurred about the 6th, 12th, and the 22d-23d, respectively. The latter passed well to the north and later joined another storm moving up the Atlantic coast; hence the northern and eastern portions of the district were most affected.

The following table summarizes the chief features of meteorological interest for the several sections of the district:

Portions of States included in the Ohio River Basin.	Temperature.				Precipitation.						
	Average.	Departure.	Highest.	Lowest.	Average.	Departure.	Greatest monthly.	Least monthly.	Greatest in 24 hours.	Average number of days.	Average snow-fall.
New York.....	41.0	+3.0	70	11	2.35	-0.18	2.42	2.20	0.75	10	7.6
Pennsylvania.....	42.3	+1.8	81	12	1.43	-1.45	3.17	0.61	1.83	8	1.2
Maryland.....	39.3	+1.1	68	10	2.16	-0.27	2.39	2.01	1.64	7	1.6
West Virginia.....	42.7	-0.3	78	2	1.71	-0.95	4.08	0.63	2.90	6	1.0
Ohio.....	42.4	+1.3	82	8	1.02	-1.65	2.40	0.24	1.57	5	0.4
Indiana.....	43.0	+0.4	78	10	1.60	-1.77	3.54	Trace.	1.81	5	0.5
Illinois.....	44.0	+1.1	78	13	1.92	-1.12	2.97	1.22	1.32	4	0.1
Kentucky.....	45.2	-0.6	82	10	1.22	-2.60	2.30	0.32	1.58	4	0.2
Tennessee.....	45.7	-2.3	80	1	1.45	-2.06	2.97	0.25	1.60	4	0.8
Alabama.....	45.7	-5.1	78	15	1.24	-2.00	2.45	0.62	1.00	4	0.9
Georgia.....	44.8	-3.8	71	16	2.44	-1.32	.....	.....	1.08	6	2.0
North Carolina.....	42.3	-2.7	80	4	2.53	-0.82	4.43	1.73	1.95	5	4.0
Virginia.....	40.1	-2.7	73	0	1.94	-0.67	3.20	1.60	1.90	6	1.8

## TEMPERATURE.

For the month as a whole temperatures over the northern half of the district averaged slightly above normal, the departures for the several sections ranging between +0.4° and +3°, while over the southern half they were under normal, with departures ranging from -0.6° for Kentucky to -5.1° for northern Alabama.

The month opened with cloudy, rainy weather and mild temperature over most of the district, due to the passage of a deep barometric disturbance which had moved from eastern Texas across the central valleys to the lower Lake region. A rapid reaction to colder quickly followed the passage of this disturbance, and during the 2d-4th unseasonably cold weather was experienced, with mean temperatures ranging from 5° to 16° below normal and minimum temperatures from 10° to 20° below freezing. The 14th-17th and 24th-28th were the only other periods of cold weather experienced during the month.

The lowest temperatures of the month were registered, as a rule, on the 28th or 29th, when minimum temperatures for the various sections or parts of sections of the district ranged from 0° to 16°, the lowest occurring in the mountain sections of West Virginia, southwestern Virginia, Tennessee, and western North Carolina. The lowest temperatures in Kentucky and sections north of the Ohio River ranged from 8° to 13°. The lowest in northern Alabama was 15° and in northern Georgia 16°. There were two periods of unseasonably warm weather, one stretching from the 5th to the 13th and the other from the 19th to the 23d. Maximum temperatures registered in the 70's and 80's quite generally on the 6th, 10th, 11th, and 12th, which were the warmest days.

## PRECIPITATION.

Rainfall for the month was generally deficient in all sections. The greater amounts, as a rule, occurred over the eastern border sections and the Wabash Valley, where the totals for the month ranged between 2 and 4 inches. Over central sections, particularly large areas in Ohio, southeastern Indiana, Kentucky, and Tennessee, the amounts at the various stations totaled generally less than 2 inches, or only about one-half of the normal for November. Furthermore, there were extensive areas in these sections which received less than an inch, quite a few stations less than half an inch, and one station only a few sprinkles.

The average monthly amounts for the various sections or parts of sections in the district ranged only between 1.02 and 2.53 inches, and the extreme limits in the monthly amounts for all stations were 4.43 inches at Highlands, N. C., and a trace at Greensburg, Ind. The number of rainy days was exceptionally small for November, also nearly all of the precipitation occurred the first half of the month and a very large proportion on the 6th and 7th. There were four distinct precipitation periods, namely, 1st-2d, 5th-8th, 12th-15th, and 23d-25th. The precipitation falling on the 24th and 25th was mostly snow.

Except in the mountain districts, where there were from 1 to 8 inches, the snowfall was unusually light for Novem-



ber. The larger amounts occurred in the mountain sections of North Carolina and Tennessee, while over most of the central and western sections of the district there were only flurries of snow and in the immediate lower Ohio Valley there was none at all. Snow, mostly flurries, fell over the larger portion of the district on the 24th, and on the 27th and 28th a snowstorm of considerable severity swept over eastern and southeastern sections.

MISCELLANEOUS.

Sleet fell in Ohio on the 9th and in West Virginia on the 9th, 14th, and 15th. Thunderstorms occurred on the 1st

in Illinois and southwestern Virginia, and on the 12th-13th in Illinois and Indiana. On the 1st the storm which occurred at Metropolis, Ill., was severe and caused considerable local damage, while that occurring at Martinsville, Ill., the evening of the 12th was tornadic and very destructive, causing the death of one person, serious injury to 3 persons, and a property loss of \$60,000 or more. Forest trees were torn up and many houses and barns demolished, electric service was put completely out of commission, and roads and highways were clogged with fallen poles and wires. Railroad trains were delayed by obstructions blown on the tracks.



TABLE 1.—Climatological data for November, 1912. District No. 3, Ohio Valley.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of overcast cloudy days.		
New York.																				
Allegany.....	Cattaraugus.....	1,441	6	41.5	.....	70	6†	11	28	44	2.20	.....	0.48	8.1	12	10	5	15	nw.	Charles E. Whitney.
Bolivar.....	Allegany.....	1,800	18	39.6	+ 3.0	68	6†	13	28	35	2.42	- 0.18	0.75	8.8	8	8	7	15	w.	Charles F. Hoffman.
Olean.....	Cattaraugus.....	1,402	4	.....	.....	.....	.....	.....	.....	.....	2.42	.....	0.52	6.0	11	.....	.....	.....	w.	John W. Alles.
Pennsylvania.																				
Aleppo.....	Green.....	1,135	11	42.7	+ 1.6	70	6	19	29	33	1.60	- 0.29	0.97	T.	6	14	1	15	nw.	J. S. Hinerman.
Baldwin.....	Butler.....	1,404	6	41.8	.....	68	10	25	25†	31	1.32	.....	0.80	1.0	5	8	7	15	w.	S. H. Templeton.
Beaver Dam.....	Beaver.....	674	18	.....	.....	.....	.....	.....	.....	.....	0.62	- 2.08	0.35	0.2	7	8	2	20	sw.	U. S. Engineers.
Brookville.....	Jefferson.....	1,173	21	.....	.....	.....	.....	.....	.....	.....	2.00	- 1.22	0.60	.....	11	.....	.....	.....	w.	H. C. Bartholomew.
Clarion.....	Clarion.....	1,078	27	.....	.....	.....	.....	.....	.....	.....	1.01	- 1.73	0.60	1.1	6	5	0	25	w.	J. A. Miller.
Claysville.....	Washington.....	1,127	8	43.4	.....	72	6	18	28	32	1.03	.....	0.55	T.	7	11	8	11	w.	E. T. Buchanan.
Confluence.....	Somerset.....	1,352	28	.....	.....	.....	.....	.....	.....	.....	1.86	- 1.31	0.98	T.	5	7	5	18	ne.	Grant Pyle.
Franklin.....	Venango.....	955	38	42.5	+ 3.0	81	7	20	29	41	1.56	- 1.65	0.40	2.0	11	10	1	19	sw.	F. E. Dixon.
Freeport.....	Armstrong.....	772	39	.....	.....	.....	.....	.....	.....	.....	1.20	- 1.93	0.90	0.6	9	4	1	25	.....	Mrs. Anna R. Burtner.
Greensburg.....	Green.....	768	23	.....	.....	.....	.....	.....	.....	.....	1.16	- 1.69	0.56	0.5	7	14	6	10	sw.	James G. Cramer.
Greenville.....	Mercer.....	950	16	41.1	+ 2.7	69	6	16	28	32	1.55	- 1.26	0.46	2.0	8	15	5	10	nw.	A. M. Orr.
Indiana.....	Indiana.....	1,350	15	42.4	+ 1.3	73	6	18	29	30	1.33	- 1.53	0.91	1.0	4	6	10	14	w.	R. W. Wehrle.
Johnstown.....	Cambria.....	1,184	24	44.0	+ 2.4	75	6	22	29†	36	1.68	- 1.52	0.80	1.0	12	10	8	12	nw.	E. C. Lorentz.
Lock No. 4.....	Washington.....	718	26	.....	.....	.....	.....	.....	.....	.....	1.38	- 1.15	0.98	0.2	8	7	11	12	s.	R. T. McGowan.
Lycippus.....	Westmoreland.....	1,420	20	42.6	+ 0.6	62	6†	23	29†	26	0.98	- 1.56	0.66	0.6	6	.....	.....	.....	.....	Murray Forbes.
Pittsburgh.....	Allegheny.....	842	42	44.1	+ 1.2	70	6	25	28	25	0.80	- 1.75	0.67	0.3	6	9	7	14	w.	U. S. Weather Bureau.
Saegertown.....	Crawford.....	1,116	21	41.1	+ 2.8	68	6	12	28	29	1.56	- 1.99	0.50	4.0	10	6	5	19	sw.	J. P. Apple.
Sharon.....	Mercer.....	940	1	42.8	.....	69	6	22	28	26	1.03	.....	0.33	0.2	9	12	2	16	sw.	Norman S. Powell.
Skidmore.....	Lawrence.....	1,000	8	40.8	.....	69	6	17	29	29	0.85	.....	0.75	1.0	2	12	4	14	sw.	W. H. Stoner.
Somerset.....	Somerset.....	2,250	56	39.6	+ 1.0	67	6†	15	29	32	3.17	- 0.27	1.58	2.5	10	0	15	15	nw.	W. M. Schrock.
Uniontown.....	Fayette.....	999	24	44.6	+ 1.4	73	6	22	4	32	1.17	- 2.18	0.60	1.0	6	2	12	16	nw.	Wm. Hunt.
Warren.....	Warren.....	1,137	23	40.4	+ 1.6	70	6	18	30	38	2.50	- 0.98	0.58	6.2	13	10	1	19	nw.	Anna Simpson.
Maryland.																				
Deer Park.....	Garrett.....	2,457	18	38.4	+ 0.4	67	6	10	4†	44	2.09	- 0.39	1.57	1.5	5	.....	.....	.....	.....	S. P. Specht.
Grantsville.....	do.....	2,351	18	40.1	+ 0.5	66	6	18	29	36	2.01	- 0.55	1.52	1.5	6	12	8	10	.....	J. S. Miller.
Oakland.....	do.....	2,461	12	39.4	+ 2.4	68	6	12	4	42	2.39	+ 0.12	1.64	1.9	11	11	7	12	w.	R. E. Weber.
West Virginia.																				
Bancroft.....	Putnam.....	574	10	41.4	- 3.7	70	10†	19	29	38	1.28	- 1.02	0.54	0.2	6	16	0	14	.....	R. E. Dent.
Becley.....	Raleigh.....	2,440	13	40.6	- 1.7	69	13	8	29	38	4.03	+ 1.76	2.00	6.0	6	17	6	7	w.	John A. Ewart.
Bens Run.....	Pleasants.....	622	10	43.2	+ 0.3	71	6†	21	29	33	1.39	+ 1.14	0.84	0	5	24	2	4	.....	J. D. Riggs.
Bluefield.....	Mercer.....	2,563	17	43.4	- 0.9	70	12	12	29	38	1.49	- 1.19	1.20	0	2	21	1	8	.....	Norfolk & Western Ry.
Buchannon.....	Upshur.....	1,472	21	42.1	+ 1.1	78	7†	15	4†	38	1.75	- 1.69	1.75	T.	1	16	2	12	.....	H. A. Darnall.
Cairo.....	Ritchie.....	667	10	43.0	- 0.4	75	13†	17	29	45	1.12	- 1.47	0.55	T.	4	6	12	12	w.	Van A. Zevely.
Central Station.....	Doddridge.....	900	11	46.4	.....	73	12	18	4†	40†	1.27	- 1.24	0.75	T.	5	8	11†	10†	w.	G. W. Sherwood.
Charleston.....	Kanawha.....	598	25	47.4	.....	73	11†	26	4†	37	1.36	- 1.57	0.83	1.0	6	12	3	15	w.	R. C. Hewes.
Creston.....	Wirt.....	612	11	42.4	- 0.5	72	11	15	29	41	1.22	- 1.08	0.59	T.	5	10	6	14	w.	J. M. Reed.
Cuba.....	Jackson.....	544	11	43.2	+ 0.1	74	6	15	28	44	0.83	- 1.25	0.59	T.	3	10	13	7	nw.	C. T. Perry.
Doane.....	Wayne.....	6	47.5	.....	.....	78	1	31	16†	36	0.88	.....	0.39	0	6	20	4	6	.....	L. A. Smith.
Elkhorn.....	McDowell.....	1,933	20	42.8	- 1.9	70	11†	14	29	43	3.84	+ 1.23	2.50	2.7	6	18	1	11	sw.	J. J. Lincoln.
Elkins.....	Randolph.....	1,940	13	40.6	+ 1.1	69	12	13	29	42	2.46	- 0.40	1.66	0.6	10	9	8	13	w.	U. S. Weather Bureau.
Fairmont.....	Marion.....	879	19	42.4	.....	72	12	21	4†	40	1.20	- 1.57	0.64	0.4	7	17	2	11	w.	F. P. Hall.
Glenville.....	Gilmer.....	738	23	44.6	+ 1.4	78	12†	15	29	42	2.38	- 0.65	1.05	0.2	6	17	1	12	w.	Joe N. Graddock.
Grafton.....	Taylor.....	985	18	43.3	+ 0.3	72	6†	17	29	41	1.84	- 1.12	1.00	T.	7	19	4	7	w.	Joseph Gerken.
Green Sulphur Springs.....	Summers.....	1,600	16	40.6	- 2.0	73	10	8	29	45†	1.51	- 0.55	1.14	3.0	8	10†	8†	11†	w.	Arthur George.
Hinton.....	do.....	1,400	22	42.4	- 2.2	76	12	15	29	46	1.36	- 0.89	0.76	1.0	6	12	4	14	w.	J. B. Lavender, C. E.
Holcomb.....	Nicholas.....	1	40.4	.....	.....	71	12†	12	29	41	2.78	.....	1.46	5.2	5	16	3	11	.....	R. E. Ferguson.
Huntington.....	Cabell.....	510	18	44.0	+ 0.6	73	6	23	16†	42	0.78	- 2.03	0.42	0.5	3	18	2	10	w.	L. H. Hutchinson.
Lewisburg.....	Greenbrier.....	2,200	11	40.3	- 1.0	69	12†	7	29	39	1.76	- 0.79	1.35	1.5	5	17	5	8	nw.	Geo. T. Argabrite.
Logan.....	Logan.....	665	10	44.9	.....	68	1†	21	29	39	2.31	- 0.54	0.90	0.5	6	20	4	6	sw.	Dr. J. E. McDonald.
Lost Creek.....	Harrison.....	1,033	15	41.5	- 0.4	74	1	13	4	45	1.46	- 0.95	0.75	0.5	5	15	7	8	w.	Allen Smith.
Madison.....	Boone.....	704	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	S. E. Bradley.
Mannington.....	Marion.....	967	11	42.0	+ 1.7	72	11†	16	29	39	1.52	- 0.62	0.91	0.6	10	11	6	13	w.	Jas. A. Morgan.
Marlinton.....	Pocahontas.....	2,169	17	36.2b	- 2.3	64	5†	2	29	42b	2.18	- 0.66	1.78	T.	5	18b	6b	4b	.....	C. J. McCarty.
Morgantown.....	Monongalia.....	1,250	36	45.0	+ 1.7	69	6†	23	28	30	1.28	- 1.74	0.74	0.5	7	17	8	5	s.	Horace Atwood.
Moundsville.....	Marshall.....	640	10	45.0	+ 2.4	73	6†	21	29	34	0.76	- 0.78	0.55	T.	4	17	1	12	sw.	M. L. Brown.
New Cumberland.....	Hancock.....	987	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Frank S. Evans.
New Martinsville.....	Wetzel.....	634	18	45.0	+ 0.8	73	1†	22	4†	36	1.22	- 1.42	0.90	T.	4	15	6	9	s.	Wm. Ankron.
Nuttallburg.....	Fayette.....	2,252	18	40.0b	.....	67	11	15	.....	30b	1.55	- 0.96	1.30	2.5	3	10b	8b	5b	.....	Miss Donna Tully.
Parkersburg.....	Wood.....	638	25	44.9	+ 1.7	73	6	25	16	31	1.03	- 1.80	0.49	T.	5	8	8	14	s.	U. S. Weather Bureau.
Parsons.....	Tucker.....	1,662	12	39.8	- 1.4	70	6	10	29	45	2.26	+ 0.09	1.25	T.	5	16	5	9	.....	J. W. Swisher.
Phillippi.....	Barbour.....	1,192	19	42.5	+ 1.5	73	6	16	4	44	1.91	- 1.04	1.25	1.6	10	11	10	9	w.	J. D. Dadisman.
Pickens.....	Randolph.....	2,785	21	41.0a	- 1.5	74	11	13	29	43a	4.08	+ 0.46	2.90	8.0	7	11a	3a	15a	w.	Dr. J. L. Cunningham.
Point Pleasant.....	Mason.....	553	21	44.8	- 0.1	77	6	19	16†	38	1.00	- 1.86	0.40	T.	6	17				



TABLE 1.—Climatological data for November, 1912. District No. 3—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of overcast days.
Ohio—Continued.																				
Bladensburg.	Knox.	1,100	21	41.8 <sup>b</sup>	+ 3.2	71 <sup>b</sup>	6	8 <sup>b</sup>	28	46 <sup>b</sup>	1.73	- 0.41	1.57	T.	3	9	12	9	sw.	Miss Mary Elliot.
Brilliant.	Jefferson.	700	...	40.7	...	72	22	20	28	26	0.50	...	0.30	T.	2	17	6	7	w.	Mrs. Mary K. Pennell.
Cadiz.	Harrison.	1,245	9	42.4	...	69	6 <sup>†</sup>	19	28	27	0.65	...	0.21	0.3	5	11	12	7	w.	Harry B. McConnell.
Cambridge.	Guernsey.	803	20	41.6	+ 2.2	73	6 <sup>†</sup>	15	28	42	0.53	- 1.80	0.21	0	4	9	16	5	...	Samuel Meahaffey.
Camp Dennison.	Hamilton.	570	19	42.6	- 0.3	71	11	15	28	34	1.00	- 1.78	0.32	0.5	6	14	6	10	sw.	Henry F. Pinkvoss.
Canal Dover.	Tuscarawas.	884	19	40.2	+ 0.4	70	6	17	28	41	0.59	- 2.00	0.41	T.	4	11	9	10	sw.	Ed. S. Slingluff.
Canton.	Stark.	1,089	29	41.2	+ 1.3	70	6	19	28	28	1.08	- 1.55	0.54	0.7	10	16	0	14	sw.	Carl H. Meyer.
Cardington.	Morrow.	1,010	17	40.9	+ 1.5	69	12	12	29	35	...	...	...	...	...	...	...	...	...	J. W. Shaw.
Chillicothe.	Ross.	630	9	...	...	...	...	...	...	...	1.11	...	0.98	0	2	...	...	...	...	Marion Mackey.
Cincinnati.	Hamilton.	628	41	45.8	+ 1.2	72	11	24	28	33	0.71	- 2.50	0.38	T.	4	12	7	11	sw.	U. S. Weather Bureau.
Circleville.	Pickaway.	694	24	44.0	+ 1.6	75	6	20	28	31	1.57	- 1.07	0.90	T.	5	15	6	9	s.	Dr. H. R. Clarke.
Clarington.	Monroe.	600	9	44.0	...	72	6	18	29	38	1.17	...	0.40	T.	5	11	9	10	sw.	Col. S. Tschappat.
Columbus.	Franklin.	918	34	42.6	+ 1.2	70	6	22	28	30	1.01	- 2.10	0.80	T.	4	15	7	8	sw.	U. S. Weather Bureau.
Coshocton.	Coshocton.	770	3	...	...	...	...	...	...	...	0.52	...	0.50	0	...	...	...	...	...	Mrs. Ada Jeffries.
Dayton (1).	Montgomery.	899	...	43.2	+ 0.9	71	11	21	28	34	0.81	- 2.08	0.57	0.2	6	12	6	12	sw.	U. S. Weather Bureau.
Dayton (2).	do.	790	31	43.4	+ 1.3	73	11	19	28	30	1.05	- 1.95	0.68	0.8	4	...	...	...	...	Mrs. Edith L. Boyer.
Delaware.	Delaware.	896	15	39.6	- 0.8	70	11	13	28	33	0.50	- 1.91	0.36	0	5	16	4	10	sw.	De Witt H. Leas.
Demos.	Belmont.	1,325	24	42.2	+ 0.9	82	6	20	28	38	0.89	- 1.54	0.62	0.2	4	17	6	7	sw.	J. T. Dysart.
Dennison.	Tuscarawas.	846	2	42.0	...	72	6	18	28	47	0.26	...	0.15	0	2	20	7	3	s.	Water Supply Co.
Frankfort.	Ross.	745	20	43.0	+ 0.6	74	6	19	16	36	1.50	- 0.96	1.25	0.6	3	12	5	13	s.	O. A. Cory.
Gallipolis.	Gallia.	580	...	...	...	...	...	...	...	...	0.96	...	0.35	0	6	...	...	...	...	Samuel F. Neal.
Garrettsville.	Portage.	1,005	28	41.0	+ 2.4	70	6	11	28	32	2.18	- 0.84	0.89	4.6	10	10	8	12	sw.	S. M. Luther.
Granville.	Licking.	960	30	41.2 <sup>b</sup>	+ 1.2	73 <sup>b</sup>	6	18 <sup>b</sup>	28	33 <sup>b</sup>	1.56	- 1.61	1.18	T.	4	12	4	14	sw.	Dr. L. E. Davis.
Gratiot.	do.	1,000	23	41.9	+ 0.9	71	6	18	28	30	0.92	- 1.82	0.74	T.	4	10	9	11	w.	W. B. Longstreth.
Green.	Adams.	500	19	45.0	+ 0.8	76	6	20	4	41	2.40	- 0.59	1.25	2.0	4	15	8	7	nw.	W. F. Kenyon.
Green Hill.	Columbiana.	1,135	19	39.8	+ 1.2	69	6	17	28	29	0.46	- 1.69	0.27	0.7	4	10	13	7	sw.	Jos. E. Bentley.
Greenville.	Darke.	1,060	26	42.9	+ 2.4	70	11	21	28	26	0.96	- 2.27	0.45	T.	5	13	7	10	w.	Geo. A. Katzenberger.
Hamilton.	Butler.	601	...	...	...	...	...	...	...	...	1.40	...	0.71	0.5	5	13	7	10	...	Earl W. Stout.
Haydenville.	Hocking.	700	...	42.6 <sup>a</sup>	...	75 <sup>a</sup>	6	9 <sup>b</sup>	27	50 <sup>a</sup>	...	...	0.24	0	1	18 <sup>b</sup>	7 <sup>b</sup>	3 <sup>b</sup>	sw.	H. W. Stiers.
Hillsboro.	Highland.	1,063	33	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Carey H. Roush.
Ironton.	Lawrence.	575	29	44.8	+ 0.8	76	6	19	28	41	1.08	- 1.68	0.39	0.5	6	11	11	8	sw.	James Bull.
Kenton.	Hardin.	1,015	20	40.7 <sup>a</sup>	+ 0.5	70 <sup>a</sup>	12	16 <sup>a</sup>	28	28 <sup>a</sup>	1.39	- 2.09	0.75	0	4	14	5	11	w.	N. S. Martin.
Killbuck.	Holmes.	1,087	19	42.6	+ 2.8	76	6	16	28	32	1.77	- 0.68	1.20	0.5	4	20	2	8	ne.	John A. Schonauer.
Kings Mills.	Warren.	640	...	...	...	...	...	...	...	...	1.17	...	0.61	0	5	10	3	17	sw.	Frank M. See.
Lancaster.	Fairfield.	898	17	43.4	+ 1.0	74	6	21	28	26	0.93	- 1.65	0.60	T.	3	13	6	11	sw.	R. L. Renshaw.
McConnellsville.	Morgan.	710	28	41.8	- 0.2	73	6	15	28	32	0.72	- 2.12	0.53	0.5	3	9	7	14	sw.	C. H. Morris.
Marletta.	Washington.	627	92	45.8	+ 3.1	72	6	21	28	36	0.84	- 2.15	0.50	0	5	10	9	11	sw.	Prof. T. D. Biscoe.
Marion.	Marion.	980	34	42.0	+ 1.6	70	11	16	28	31	1.36	- 1.26	0.40	1.3	8	12	9	9	sw.	Dr. E. H. Raffensperger.
Millfordton.	Knox.	1,200	20	39.3	+ 0.5	70	6	17	8	38	1.27	- 1.05	0.98	0.5	5	11	11	8	sw.	L. G. Burgess.
Milligan.	Perry.	875	19	42.6	+ 1.6	80	11	10	28	46	0.52	- 1.72	0.32	0.5	4	12	10	8	sw.	V. C. Eveland.
Millport.	Columbiana.	1,145	19	40.6	+ 1.3	70	6	17	28	30	0.45	- 1.91	0.33	0.3	5	8	13	9	sw.	G. F. Copeland.
Nellie.	Coshocton.	850	12	40.0	+ 0.4	70	6	12	28	33	1.36	- 1.07	0.98	T.	2	12	12	6	s.	Ethel L. Gammertsfield.
New Berlin.	Stark.	1,100	19	40.4	+ 1.1	68	6	19	28	29	1.44	- 0.87	0.75	0.5	6	16	5	9	sw.	Clayton Holl.
New Waterford.	Columbiana.	1,053	17	41.2	+ 1.8	68	6	19	29	30	0.90	- 1.83	0.53	1.0	3	14	7	9	sw.	Sam. C. Scott.
O. S. University.	Franklin.	757	29	42.6	+ 2.2	71	6 <sup>†</sup>	19	28	28	1.05	- 1.65	0.44	T.	5	12	10	8	s.	Prof. H. C. Lord.
Oregonia.	Warren.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	E. H. Stephens.
Pataskala.	Licking.	1,015	20	41.6	+ 1.1	72	6	17	28	31	1.63	- 1.32	1.32	0.1	6	11	13	6	sw.	J. N. Ridenour.
Peebles.	Adams.	645	1	42.8	...	76	6	14	16	43	1.39	- 0.85	0.85	1.0	7	12	8	10	nw.	Ora O. Smalley.
Philo.	Muskingum.	1,018	17	44.0	+ 1.0	72	6 <sup>†</sup>	18	28	29	0.38	- 1.82	0.26	T.	2	13	14	3	sw.	L. C. Burckholter.
Piqua.	Miami.	847	2	...	...	...	...	...	...	...	1.29	...	0.45	0.5	6	11	5	14	sw.	Harry L. Roberts.
Plattsburg.	Clark.	1,130	19	41.4	+ 0.3	69	11	14	28	27	1.17	- 1.74	0.63	1.0	6	14	7	9	sw.	F. E. Stewart.
Portsmouth.	Scioto.	527	81	45.4	+ 0.7	74	6	23	29	42	1.27	- 1.69	0.71	T.	5	17	2	11	sw.	Dr. H. A. Schirrmann.
Prospect.	Marion.	909	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Neil J. Gast.
Sidney.	Shelby.	985	29	43.3	+ 2.8	73	11	18	28	30	0.90	- 2.35	0.42	0.2	8	13	4	13	sw.	Hamline B. Blake.
Somerset.	Perry.	1,080	13	43.6	+ 0.4	71	6	18	28	28	0.59	- 1.70	0.40	T.	3	11	9	10	s.	Miss M. W. C. Sheridan.
Springfield.	Clark.	980	18	...	...	...	...	...	...	...	0.92	- 1.76	0.62	T.	5	14	8	8	sw.	W. A. Webster.
Summerfield.	Noble.	1,187	6	42.3	...	72	6	13	28	32	0.81	...	0.47	0.2	4	10	12	8	s.	H. R. McClintock.
Syracuse.	Meigs.	583	1	43.8	...	76	6	20	16	37	1.14	...	0.51	1.0	4	21	5	4	w.	Irring R. Karr.
Thurman.	Gallia.	696	19	46.4	+ 2.4	78	6	18	16	39	0.68	- 1.86	0.43	1.0	3	12	9	9	...	D. D. Thomas.
Urbana.	Champaign.	1,031	44	40.6	+ 0.3	71	12	14	28	32	0.94	- 1.97	0.55	T.	4	14	9	7	sw.	Prof. J. H. Williams.
Warren.	Trumbull.	900	23	42.3	+ 2.5	71	6	21	28	30	1.36	- 1.17	0.63	2.4	8	13	7	10	sw.	M. D. McKie.
Waverly.	Pike.	590	29	43.8	+ 1.0	75	6	19	16	39	1.13	- 1.71	0.69	0.4	6	12	2	16	s.	Dr. Peru Hunt.
Waynesville.	Warren.	700	27	42.9 <sup>a</sup>	+ 1.3	70	11	17	28	...	1.17	- 1.98	0.60	0.1	5	17	4	9	sw.	Charles Michener.
Wooster.	Wayne																			



TABLE 1.—Climatological data for November, 1912. District No. 3—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.					Sky.					Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.				
Indiana—Continued.																						
Marengo.	Crawford.	363	30	42.8	- 2.1	73	11	15	28	40	1.64	- 3.06	0.84	0.1	4	12	6	6	sw.	J. M. Johnson.		
Marion.	Grant.	814	26	42.0	+ 1.8	72	11	18	28	30	1.80	- 1.33	0.81	1.2	7	14	9	7	sw.	James F. Hood.		
Mauzy.	Rush.	980	32	41.2	+ 1.4	72	11	15	28	32	0.92	- 2.59	0.39	1.4	4	14	6	10	sw.	Elwood Kirkwood.		
Monticello.	White.	674	2								3.42		1.10	T.	4	19	3	8	w.	J. E. Loughry.		
Moores Hill.	Dearborn.	980	11	43.8	+ 0.4	71	11	18	28	28	0.81	- 1.45	0.35	0.5	4	20	2	8	sw.	W. S. Bigney.		
Mount Vernon.	Posey.	410	26	44.8	- 0.8	75	11	22	28	37	1.08	- 2.85	0.70	T.	4	20	1	9	sw.	Guy B. Green.		
Nashville.	Brown.			43.2		71	11	15	28	34	0.63		0.50	0.3	4	11	9	10	w.	W. C. Goble.		
Paoli.	Orange.	611	15	43.4	- 1.1	71	11	15	28	37	0.71	- 2.33	0.34	T.	3	16	7	7	sw.	James A. Gillum.		
Princeton.	Gibson.	481	30	44.4	+ 0.5	74	10	20	28	31	1.69	- 1.82	0.74	T.	4	18	2	10	sw.	Albert Mills.		
Richmond.	Wayne.	972	27	40.8	0.0	71	11	15	28	35	0.61	- 2.48	0.22	0.9	6	12	12	6		Walter Vossler.		
Rochester.	Fulton.	775	7	41.0		68	11	20	28	25	2.98		1.09	0.2	7	16	4	10		G. P. Keith.		
Rockville.	Parke.	722	26	43.0	+ 1.0	72	11	18	28	33	2.58	- 0.86	1.81	1.0	4	12	9	9	w.	C. A. Lee.		
Rome.	Perry.	370	9	46.2		76	11	18	28	38	1.10		0.73	T.	4	17	5	8	sw.	Adam Anspach.		
Salamonia.	Jay.	950	7	41.4		71	11	16	28	30	1.52		0.50	3.0	8	12	7	11	sw.	S. A. Armstrong.		
Salem.	Washington.	717	19	43.1	- 1.5	73	9	15	28	40	1.11	- 2.23	0.60	T.	3	11	7	12	w.	Emmett S. Allen.		
Scottsburg.	Scott.	570	18	44.0	- 0.9	72	11†	16	29	36	0.64	- 2.41	0.26	T.	3	8	6	9	w.	Rev. Albert A. Young.		
Seymour.	Jackson.	610	25	44.4	+ 0.9	74	11	17	28	35	0.56	- 2.92	0.25	T.	4				sw.	J. Robt. Blair.		
Shelbyville.	Shelby.	768	8	42.6		73	11	17	28	37	1.19		0.48	2.5	5	8	16	6	sw.	Edgar G. Hodson.		
Shoals.	Martin.	523	5								1.33		0.68	T.	4					Rev. G. Halleck Rowe.		
Terre Haute.	Vigo.	498	22	44.1	- 0.3	71	11	22	28	26	1.16	- 2.05	0.67	0.1	6	7	15	8	sw.	U. S. Weather Bureau.		
Veedsburg.	Fountain.	612	13	42.8	+ 0.6	74	11	15	28	36	2.60	+ 0.45	1.05	1.0	8	18	4	8	s.	L. A. Culver, Jr.		
Vevay.	Switzerland.	525	31	45.8	+ 0.7	75	12	19	28	33	1.35	- 2.01	1.00	0.5	3	13	6	11	nw.	Miss Frederica Boerner.		
Vincennes.	Knox.	431	20	44.4	+ 2.6	73	11†	20	28	31	2.50	- 1.02	1.00	T.	4	18	1	11	s.	Garrett V. List.		
Washington.	Daviess.	484	16	44.2	- 1.6	72	11†	20	28	30	1.79	- 1.35	0.75	T.	4	16	4	10	sw.	Charles C. Feagans.		
Whitestown.	Boone.	529	4	40.6		70	11	19	28†	35	1.64		0.94	T.	6	13	12	5	sw.	Clyde O. Laughner.		
Winona Lake.	Kosciusko.	865	5	41.4		71	11	20	28	32	3.25		1.16	2.0	8	5	20	5	w.	Rev. Albert A. Young.		
Worthington.	Greene.	526	30	43.0	0.0	70	11†	18	28	32	2.10	- 1.60	0.72	2.0	6	14	11	5	sw.	D. W. Solldiday.		
Illinois.																						
Albion.	Edwards.	531	21	44.6	+ 0.9	73	20	20	28	33	1.97	- 1.42	1.07	0.2	4	20	5	5	sw.	B. F. Michels.		
Casey.	Clark.	945	9								1.31	- 2.10	0.80	0	2	20	2	8	w.	Wm. Chenoweth.		
Charleston.	Coles.	720	27	43.2	+ 1.1	72	11	18	28	29	1.22	- 1.98	0.42	T.	4	11	13	6	s.	Jacob B. Daisy.		
Danville.	Vermilion.	604	11	43.2	+ 3.2	74	11	18	28	35	2.39	- 0.73	0.85	0.6	8	17	4	9	sw.	J. J. Lemon.		
Equality.	Gallatin.	421	14	48.6	+ 1.0	76	5†	23	28	32†	1.57	- 1.39	1.05	0	4	21	1	8	n.	Dr. L. W. Gordon.		
Fairfield.	Wayne.	450	19	45.2	+ 0.1	75	10	19	28	34	2.87	- 0.28	1.20	T.	6	13	12	5	nw.	George A. Tromly.		
Flora.	Clay.	495	26	45.2	+ 2.6	75	10	21	15†	33	2.10	- 1.21	1.01	0	3	19	7	4	sw.	W. L. Hanna.		
Golconda.	Pope.	500	34	46.0	- 0.6	78	11	17	28	40	1.42	- 2.71	0.78	0	4	21	5	4	nw.	Dr. D. Lawrence.		
Hoopeston.	Vermilion.	715	10	43.0	+ 2.1	73	11	18	28	29	2.97	+ 0.33	0.92	0.7	7	17	8	5	w.	S. F. Hoskinson.		
McLeansboro.	Hamilton.	462	29	44.9	+ 0.2	74	10	20	28	33	2.65	- 0.78	1.32	0	4	20	5	5	w.	Prof. W. C. Fairweather.		
Metropolis.	Massac.	346	1								1.45		1.00	0	3	22	2	6	sw.	Henry H. Humma.		
Montrose.	Effingham.	599	2	42.6		74	11	16	28	36	1.55		0.58	T.	6	15	7	8	sw.	J. C. Spitzer.		
Mount Carmel.	Wabash.	424	11	44.0	+ 0.4	74	10†	21	28†	39	1.80	- 1.86	0.66	T.	4	20	1	9	sw.	Mrs. H. M. Phillips.		
New Burnside.	Johnson.	613	17	45.9	+ 1.1	74	10†	19	28	33	1.58	- 1.66	0.73	0	5	23	4	3	nw.	Thomas H. McCabe.		
Newton.	Jasper.	484	1								1.25		0.60	0	5	21	4	5	sw.	J. M. Hicks.		
Olney.	Richland.	486	25	43.0	- 0.6	71	10†	21	15	39	1.31	- 2.14	0.90	T.	3	21	4	5	nw.	John T. Ratcliff.		
Palestine.	Crawford.	500	30	44.8	+ 2.0	72	10	20	28	30	2.59	- 0.98	0.96	T.	5	16	4	10	sw.	Duane Shaw.		
Paris.	Edgar.	900	19	42.7	+ 0.7	72	11	20	28	33	2.15	- 1.10	0.73	T.	4	17	6	7	nw.	H. P. Twyman.		
Phil.	Champaign.	700	28	40.7	+ 1.2	72	10†	13	28	35	1.74	- 1.30	1.03	T.	4	19	7	4	nw.	H. A. Burr.		
Rantoul.	do.	768	21	42.7	+ 2.9	72	11	18	28	35	2.73	+ 0.07	0.77	0.2	6	20	1	9	nw.	William Breiner.		
Rileyville.	Saline.	400	15								2.38	- 6.16	0.98	0	4	19	0	11	sw.	W. H. Thornberry.		
Shawneetown.	Gallatin.	307	2								1.23		0.82	0	3				sw.	Mrs. Mary O. Spivey.		
Tuscola.	Douglas.	644	19								1.96	- 0.53	0.94	T.	4	18	2	10	sw.	Joseph O'Neal.		
Urbana.	Champaign.	725	10	41.8	+ 1.0	72	11	16	28	31	1.77	- 0.39	1.25	T.	5	9	15	6	sw.	Prof. J. G. Mosier.		
Kentucky.																						
Alpha.	Clinton.		18	48.6	- 0.4	75	11	18	28	36	1.05	- 3.01	0.55	0.5	3	19	4	7	w.	W. W. Hicks.		
Anchorage.	Jefferson.	700	11	43.8	- 0.3	74	11	14	28	40	1.39	- 1.54	1.02	0.2	3	16	5	9	sw.	C. E. Barrett.		
Bardstown.	Nelson.	637	15	45.5	- 1.1	76	11	15	28	37	1.43	- 1.95	0.75	1.0	5	18	1	11	se.	T. S. Talbott.		
Beattyville.	Lee.	650	8	43.1		81	11†	13	29	50	1.36	- 1.61	0.60	2.0	5	11	7	12	e.	G. W. Cann.		
Beaver Dam.	Ohio.	441	9	44.9	- 0.2	77	11	15	28	42	1.05	- 2.07	0.57	0	3	19	1	10	s.	W. T. Austin.		
Berea.	Madison.	1,070	11	48.0	+ 1.3	77	20	18	2	38	1.55	- 1.25	0.91	0.2	5	20	3	7	sw.	C. F. Rumold.		
Blandville.	Ballard.	445	31	48.6	+ 2.0	74	10	24	25†	31	0.73	- 3.73	0.37	0	3	20	4	6	sw.	E. W. Horr.		
Bowling Green.	Warren.	500	23	45.5	- 1.4	77	11	15	28	40	0.32	- 3.74	0.15	0.2	3	22	8	0	n.	Mrs. L. G. Causey.		
Burnside.	Pulaski.	773	21								0.95	- 2.72	0.42	T.	4				sw.	G. M. Estes.		
Calhoun.	McLean.	397	9	47.8	+ 0.4	78	11	21	28	36	1.40	- 1.80	1.00	0	3	10	14	6	nw.	W. A. Taylor.		
Catlettsburg.	Boyd.	544	23								0.94	- 2.20	0.38	T.	7				sw.	Mrs. Mertie M. Bruns.		
Earlington.	Hopkins.	370	22	45.8	- 1.9	78	11	15	28	40	0.61	- 3.77	0.47	0	2	22	1	7	nw.	Brick Southworth.		
Edmonton.	Metcalfe.	600	21								1.66	- 1.46	0.72	T.	5	13	6	11	se.	Miss Lee Ray.		
Eubank.	Pulaski.	1,177	18	42.5	- 2.2	74	11	12	28	41	1.66	- 1.46	0.72	T.	5	13	6	11	se.	Mrs. Katie Payne.		
Falmouth.	Pendleton.	530	23								1.09	- 2.53	0.77	T.	4	14	4					



TABLE 1.—Climatological data for November, 1912. District No. 3—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelting.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of overcast cloudy days.
Tennessee.																				
Ashwood.	Maury.	725	33	47.2	- 1.8	76	10†	17	28	40	0.25	- 3.52	0.25	T.	1	16	6	8	n.	Mrs. Joseph W. Fleming.
Benton.	Polk.	880	27	44.6	- 4.6	76	12	16	28	43	1.88	- 1.14	1.10	2.0	4	18	7	5	n.	George L. Williams.
Birds Bridge.	Greene.		6								1.93		1.20	3.8	5	23	3	4	e.	David B. George.
Bluff City.	Sullivan.		13								2.16	- 0.19	1.28	2.0	6	15	7	8	e.	John W. Fisher.
Byrdstown.	Pickett.	1,026	19	46.8	- 1.2	73	11†	19	28	34	0.90	- 2.95	0.52	T.	2	12	7	11	s.	John Lacy.
Carthage.	Smith.	500	28	46.4	- 2.0	77	10	17	28	44	1.92	- 1.87	1.31	T.	2	18	2	10	nw.	Earl C. Pickering.
Cedar Hill.	Robertson.	625	12	47.2		77	11	18	28	35	0.95	- 3.64	0.60	0.5	3	23	6	1	n.	J. Frank Ruffin.
Celina.	Clay.	494	9								1.25		0.64	T.	2	16	2	12	w.	Charles M. Anderson.
Charleston.	Bradley.	709	15								1.61	- 1.50	1.36	1.5	3	17	6	7	w.	John T. Weeks.
Chattanooga.	Hamilton.	808	33	48.2	- 2.1	76	11	24	29	38	0.64	- 2.94	0.34	0.8	4	16	9	5	nw.	U. S. Weather Bureau.
Clarksville.	Montgomery.	500	49	46.8	- 0.2	76	11	19	28	40	0.92	- 3.30	0.69	0.2	3	18	7	5	n.	Prof. James A. Lyon.
Clinton.	Anderson.	800	24								2.01	- 1.22	1.01	T.	4	17	6	7	n.	Hugh Evans.
Crossville.	Cumberland.	1,895		44.4		73	11	15	28	37	1.54		0.70	0.9	6	22	3	5		J. E. Converse.
Dandridge.	Jefferson.		8								1.44		1.00	1.0	4	19	1	10	w.	James E. Swann.
Decatur.	Meigs.	850	16	44.8	- 3.8	75	11†	16	29	47	1.14	- 2.16	0.50	3.0	5	23	3	4	nw.	J. Worth Lillard.
Dickson.	Dickson.	800	16	47.6	- 0.6	78	11†	15	28	44	0.78	- 3.24	0.50	T.	2	19	6	5	n.	Nathan R. Sugg.
Dover.	Stewart.	500	17	47.2	- 1.2	79	11	15	28	41	1.21	- 3.34	1.05	T.	2	18	6	6	s.	Asa M. Tippit.
Dunlap.	Sequatchie.	726	3	45.8		75	11	18	29	46	0.90		0.43	T.	5	19	6	5		S. Bradford Boyd.
Elizabethton.	Carter.	1,575	22								0.81	- 1.37	0.25	3.5	5	18	0	12	e.	Charles Boyd.
Erasmus.	Cumberland.	1,850	15	41.2	- 3.5	76	11	14	18	48	1.31	- 2.29	0.51	0.3	6	17	9	4	nw.	Mrs. Sarah E. Ashley.
Florence.	Rutherford.	560	30	46.4	- 2.2	76	1	17	28	35	2.97	- 0.56	1.10	0.2	4	22	2	6	s.	Erastus P. Bell.
Franklin.	Williamson.	648	22	45.0	- 2.9	73	11	17	28	38	1.12	- 2.38	0.57		2	20	3	7		Young M. Rizer.
Halls Hill.	Rutherford.		10								2.45		1.25	T.	2	14	4	12	n.	Edward F. Wright.
Hohenwald.	Lewis.	983	26	46.6	- 1.7	75	1†	14	28	49	1.39	- 2.65	0.84	0	3	17	11	2	nw.	Mrs. Mary Lutzelman.
Iron City.	Lawrence.	600	15	45.0	- 4.7	74	10	14	28	46	1.38	- 2.07	0.88	T.	3	13	16	1	sw.	Capt. H. Paul Seavy.
Jefferson City.	Jefferson.		2								1.26		0.84	2.0	3					Calvin C. Maddox.
Johnson City.	Washington.	1,620	1	42.6	- 3.3	73	11†	11	29	46	2.35	- 0.68	1.17	3.5	5	19	7	4	w.	Ward Crosby.
Johnsonville.	Humphreys.	364	16	47.8	- 1.4	78	9	16	28	44	1.14	- 3.22	0.66	T.	5	15	8	7	s.	Miss Sallie B. Mathews.
Kingston.	Roane.		21								1.51	- 1.62	0.58	T.	4	23	0	7	n.	Henry Crumbliss.
Knoxville.	Knox.	977	41	46.0	- 1.1	74	11	21	29	36	1.47	- 2.13	0.88	0.5	5	17	6	7	sw.	U. S. Weather Bureau.
Lebanon.	Wilson.	522	3	48.1		75	11	12	28	36	1.93		1.40	T.	2	18	2	10	s.	H. Logan Fields.
Lewisburg.	Marshall.	727	17	46.7	- 2.9	77	11	15	28	48	2.07	- 0.97	1.25	0.4	5	20	6	4	se.	Dr. Robert D. Crutcher.
Loudon.	Loudon.	816	9								1.67	- 1.36	0.76	0.5	4	19	3	8	w.	Robert W. Clark.
Lynnville.	Giles.	770	24	45.2	- 3.7	70	12	20	28	37	1.94	- 1.39	1.18	T.	3	22	5	3	n.	Col. James H. Burrow.
McGhee.	Monroe.		8								1.92		1.18	2.0	3	23	1	6	s.	Miss Alice L. Headrick.
McMinnville.	Warren.	1,011	28	45.6	- 2.8	77	11	16	28	47	1.75	- 1.89	0.75	T.	3	20	8	2	nw.	Horace H. Stiles.
Maryville.	Blount.	1,050	16																	Mrs. Sam. Broyles.
Mountain City.	Johnson.	2,486	15	40.6	- 1.8	72	12	1	29	50	1.59	- 0.78	0.70	4.0	5	18	1	11		Edward E. Barry.
Nashville.	Davidson.	654	41	47.2	- 1.5	75	10	22	28	38	0.65	- 3.20	0.42	T.	3	16	7	7	w.	U. S. Weather Bureau.
Newport.	Cocke.	1,280	22	43.1†	- 3.0			15	29	37†	2.10	- 0.63	0.95	4.5	5	17	4	9	s.	Dr. Charles T. Burnett.
New River.	Scott.	1,215	5								0.73		0.38	0.2	3	18	3	9	w.	Burl W. Buttram.
Palmetto.	Bedford.	770	19	46.9	- 3.5	75	11	16	28	41	1.49	- 1.43	0.64	T.	3	15	9	6	s.	Mrs. Ross Woods.
Perryville.	Decatur.	387	15	48.0		80	1	18	24	44	2.07	- 2.23	1.66	T.	3	25	3	2		Oliver C. Kirksey.
Pinewood.	Hickman.		5								0.28		0.28	T.	1	20	5	5	s.	Miss Carrie Cash.
Rogersville.	Hawkins.	1,150	27	43.9	- 2.3	73	11†	16	29	42	1.58	- 1.29	1.01	2.0	6	16	9	5	w.	Fred Beal.
Rugby.	Morgan.	1,410	24	43.8	- 0.9	76	10†	11	28	47	1.42	- 2.14	0.45	1.0	5	16	7	7	n.	Samuel G. Wilson.
Savannah.	Hardin.	442	28	48.0	- 1.8	77	11	17	28	44	1.26	- 2.47	0.70	T.	4	16	7	7	s.	W. H. Carrington.
Sevierville.	Sevier.		6	44.2		74	11	13	29	44	1.69		1.00	3.0	5	11	11	8	sw.	Herbert O. Eckel.
Sewanee.	Franklin.	2,000	16	46.6	- 1.6	64	5	23	25	36	0.83	- 2.82	0.63	2.0	2	19	5	6	n.	University of the South.
Sparta.	White.	920	6	44.5		75	11	16	28	44	1.85		1.10	0.5	4	18	5	7	w.	Ernest H. Hull.
Springville.	Henry.	377	9	46.4	- 1.3	75	10†	14	28	44	1.57	- 3.21	1.04	T.	4	26	1	3	n.	Hudnall A. Boden.
Tazewell.	Claiborne.	1,350	15	41.2		74	11	10	29	48	1.27	- 1.90	0.75	T.	3	19	3	8	nw.	J. Caloway Carr.
Tullahoma.	Coffee.	1,075	24	45.2	- 1.9	71	1†	16	28	41	2.31	- 1.10	1.07	T.	5	19	8	3	n.	Reuben T. Moore.
Walling.	White.	909	9								1.26		0.52	T.	3	21	2	7	nw.	John K. Roberts.
Waynesboro.	Wayne.	753	26	47.0	- 1.6	76	11	15	28	44	1.75	- 1.74	1.05	T.	4	16	8	6	n.	Harry C. Boyd.
Wildersville.	Henderson.	400	15	46.4†	- 3.6	74	11	20	25	36†	1.28	- 2.62	0.64	T.	3	19†	3†	4†	n.	William R. Wilson.
Worsham.	Sumner.	550	11								0.79	- 3.22	0.65	0.5	3	20	2	8	nw.	James G. Elizer.
Yukon.	Lincoln.	850	15	46.2	- 5.0	71	12	20	28	36	1.28	- 2.30	0.83	0	3	19	8	3	n.	William P. Watson.
Alabama.																				
Bridgeport.	Jackson.	660	12								0.99	- 2.18	0.73	0.5	3					R. L. Moore.
Decatur.	Morgan.	573	30	44.9	- 5.9	74	11†	20	28†	43	1.41	- 1.92	0.74	0	4					E. A. Carriger.
Florence.	Louderdale.	563	28	46.3	- 4.7	78	11	19	25†	49	1.07	- 2.00	0.53	T.	4					Robt. E. Coburn.
Guntersville.	Marshall.	580	2								1.26		0.65	0.5	4					L. S. Long.
Madison.	Madison.	573	18	47.0	- 4.5	75	10†	18	28	39†	2.45	- 0.58	1.00	2.5	4	18	7	5	n.	J. B. Stevenson.
Riverton.	Colbert.	360	15	44.3	- 5.8	76	11	15	25†	48	1.24	- 2.12	0.76	T.	4					Ernie J. Moore.
Scottsboro.	Jackson.	652	29	45.6	- 4.6	76	12	16	29	47†	0.62	- 2.96	0.47	1.0	3	19	1	10	nw.	H. A. Caldwell.
Tuscumbia.	Colbert.	488	30	46.0	- 5.2	74	10†	22	28†	42	0.86	- 2.24	0.35	1.8	4					Samuel Moore.
Georgia.																				
Diamond.	Gilmer.	2,020	20	44.8†	- 3.8	71	11†	16	29	41	2.44	- 1.32	1.08	2.0	6	21	2	7		R. A. Kimzey.
North Carolina.																				
Andrews.	Cherokee.	1,800	2	44.0		75	11	13	29	47	1.73		0.91	1.0	5	19	7	4	n.	J. D. Link.
Asheville.	Buncombe.	2,255	33	43.1	- 2.0	75	12	12												



TABLE 1.—Climatological data for November, 1912. District No. 3—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Virginia.																				
Blacksburg.....	Montgomery.....	2,170	21	42.6	+ 0.4	73	12	8	29	46	1.97	- 0.18	1.17	1.3	5	18	9	3	w.	Agricultural Experiment Station.
Burkes Garden.....	Tazewell.....	3,250	17	38.1	- 2.2	64	12	6	29	46	1.90	- 1.10	1.04	4.0	4	16	2	12	w.	C. H. Greever.
Elk Knob.....	Lee.....	3,243	9	44.2	.....	68	12	22	28	23	1.86	.....	0.85	1.0	8	17	6	7	nw.	Henry Nicoll.
Ivanhoe**.....	Wythe.....	2,028	16	40.3	.....	66	12†	8	29	34	1.76	.....	0.85	0.3	6	21	6	3	w.	Miss Alice G. Jewett.
Max Meadows.....	do.....	2,028	16	40.3	- 3.2	72	11	2	29	46	1.83	- 0.13	0.85	3.5	5	15	7	8	w.	James M. Graham.
Mendota.....	Washington.....	1,350	3	.....	.....	.....	.....	.....	.....	.....	1.66	.....	0.80	2.0	7	.....	.....	.....	.....	Frank M. Barker.
Mountain Lake.....	Giles.....	4,348	2	34.1	.....	70	11	0	29	39	3.20	.....	1.90	3.0	5	17	6	7	nw.	H. E. Dorland.
Radford.....	Montgomery.....	1,773	3	.....	.....	.....	.....	.....	.....	.....	1.86	.....	1.32	1.0	3	.....	.....	.....	.....	Arthur Roberts.
Speers Ferry.....	Scott.....	1,221	16	.....	.....	.....	.....	.....	.....	.....	1.60	- 1.66	0.81	2.0	6	21	3	6	w.	Mrs. L. E. Venable.
Wytheville.....	Wythe.....	2,293	19	41.1	- 1.9	68	13	12	29	41	1.74	- 1.30	1.20	T.	7	20	6	4	w.	U. S. Weather Bureau.

\* a, b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

\*\* Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.



TABLE 2.—Daily precipitation for November, 1912. District No. 3, Ohio Valley.

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
New York.																																	
Allegany	Allegany	.33	.22				T.	.48	T.	.39				.10	.02	.07	.03		.01	.02					.13	.40	T.	T.				2.20	
Bolivar	do.	T.	.16	.16				.75		.41				.12	T.	T.									.34	.43	T.	T.				2.42	
Clean	do.	.08	.35	.15	T.			.40	.35	.25	.06				.08		.13	T.		.05						.52	T.					2.42	
Pennsylvania.																																	
Aleppo	Ohio	.23						.97		.05				.16	.14										T.	.05						1.60	
Baldwin	Allegheny	T.	T.					.80	T.	.20			.07		.15			T.						T.	.10							1.32	
Beaver Dam	Ohio	.05	.03					.35	.12	.03	T.				.02	.02	T.	T.						T.	.02		T.	T.				0.62	
Beaver Falls	do.	.05	.04	T.				.30	.11	.02	.01				.02	.01	T.							T.	.05	T.						0.61	
Brookville	Allegheny	.25	.10	.10	.10			.60		.05		.30	.30	.10	.05	.05																2.00	
California	Monongahela	.16	T.				T.	1.83						.11	.05	T.								T.	T.							2.15	
Clarion	Allegheny							.60	.10	.10					.10	.01									.10							1.01	
Claysville	Ohio	.17	.02					.55		.02				.04	.08	T.	T.							.15	T.		T.					1.03	
Confluence	Youghiogheny		.19	T.				.98	.27	.08	T.				.34	T.	T.	T.						T.	T.	T.		T.				1.86	
Coraopolis	Ohio	.02	.06	T.				.45	.11	T.					.03	T.	T.							T.	.03	T.		T.				0.70	
Davis Island Dam	do.	.01	.07	T.				.43	.09	T.	.01				.02	.01	T.	T.	T.					.01	.03	T.	T.	T.				0.68	
Derry Station	Allegheny	.05	T.					.67						T.	.12									.05								0.92	
Ellwood City	Ohio	.07	.02	T.				.41	.12	.06	.03				.03	.03	T.							.02	.02	T.						0.81	
Franklin	Allegheny	.10	.12	.10				.40	.15	.10	.10				.10	.15	.10	T.							.02	.02	T.	T.					1.56
Freeport	do.	.02	T.	T.				.74	.16	.06	.02			.08	.02	.04										.06							1.20
Greensboro	Monongahela	T.	.06					.56	.24	.06					.14	.04	T.									.06							1.16
Greensburg	Youghiogheny	.11	T.	T.			T.	.94		.02				.07	T.	.05								T.	.02								1.21
Greenville	Ohio	.26	.14	T.				.46	T.	.17	T.			.04	.12	.13	T.								.23	T.	T.	T.					1.55
Grove City	do.	.07	.06	.02				.50	T.	.02	T.				.13	.10	.01	T.						T.	.08	T.		T.		.02			1.01
Herrs Island Dam	Allegheny	.01	.07	T.				.50	.10	T.	T.			T.	.03	.02	T.							T.	.02	T.	T.	T.					0.75
Indiana	do.	.17						.91		.15															.10								1.33
Irwin	Monongahela	.13	T.	T.				1.09						.11	.05	T.		T.						T.									1.38
Johnstown	Allegheny	.23	.03	T.			.02	.80	.05	.13	.01			.18	.06	.03		T.						.08	.06	T.			T.				1.68
Lock No. 4	Monongahela	.10	.10	T.				.78	.20	.05					.08	.05	T.							.02									1.38
Lycippus	Allegheny	.12	T.					.66		.01				.13												.04							0.98
Mosgrove	Ohio	.05	.02					.61	.14		.10				.03	.04	.01								.10	T.							1.10
Parkers Landing	Allegheny	.08		.10				.50	.10	.12	.04				.12	T.	T.	T.							.02	T.							1.34
Pittsburgh	Ohio	.06	T.				T.	.67	T.	T.				.02	.02	.01	T.	T.							.02	T.		T.					0.80
Saegertown	Allegheny	.18	.20	.07					.50					.05	.05	.11	.02									.35			.03	T.			1.56
Saltsburgh	do.		.12	.01				.72	.25	.05	T.	T.			.12	T.									.06	T.							1.33
Sharon	Ohio	.10	.04	T.				.33	.14	.14	.04	T.		T.	.03	.12	T.									.09	T.	T.	T.	T.			1.03
Skidmore	do.							.75							.10										.10								0.85
Somerset	Youghiogheny		.26	T.			T.	1.58	.07	.10				.61	.10	.05								.10	.10								3.17
Springdale	Allegheny	.02	.24					.62	.15	.01					.08										.04								1.16
Uniontown	Monongahela	.18	T.				T.	.60	.14	.06				.17	T.										.02				T.				1.17
Warren	Allegheny	.40	.10	.20				.58		.20	.20			.16		.10	.12			.08					.06	.20		.10					2.50
West Newton	Youghiogheny		.24					.64	.30	.06	T.			T.	.02	.03	T.								T.	T.							1.29
Maryland.																																	
Deer Park	Youghiogheny	.09	T.					1.57		.09				.22	.07											.05							2.09
Grantsville	do.	.07					T.	1.52						.22											.05	.05				.10			2.01
Oakland	do.	.15	T.					.03	1.64	.02	.05			.24	.10	.02									.04	.06				.04			2.39
West Virginia.																																	
Bancroft	G. Kanawha	.24						.54		.10						.33									.05	.02							1.28
Beckley	do.	.50	T.					.50	2.00					.43											.40					.20			4.03
Bens Run	Ohio	.23						.84						.20	.07										.05								1.39
Bluefield	G. Kanawha	.29						1.20																									1.49
Brandonville	Monongahela				1.01																												1.79
Buckhannon	do.	T.					T.	1.75								T.										T.			T.				1.75
Cairo	L. Kanawha	.15						.55	.15					.27												T.							1.12
Central Station	Middle Is. Ck.	.19	T.				T.	.75		T.				.12	.17	.04									T.								1.27
Charleston	G. Kanawha	.20						.55	.28						.15	.03											.15						1.36
Cheat Bridge	Monongahela	T.	.20					1.55	.30	T.					.28	.01									.16	.20							2.70
Cortland	do.		.25					1.58							.94																.35		3.12
Creston	L. Kanawha	.20						.47	.12					T.	.38	.05										T.							1.22
Cuba	Sand Creek	.14					T.	.59						.10	T.	T.										T.							0.83
Davis	Monongahela		.25					1.48	.45	.18					.51									.26	T.	.15				.10			3.38
Doane	Big Sandy	.25	.03						.03					.39											.07	.11							0.88
Elizabeth	L. Kanawha	.11	.04					.51	.09					.03	.11																		0.89
Elkhorn	Big Sandy	2.50						.25	.40					.30												.09			.30	T.			3.84
Elkins	Monongahela	.29	T.	T.			T.	1.66	.03	T.				.24	.09	.01								.03	.04	.01			T.	.06			2.46
Fairmont	do.	.07	.17					.50	.14	T.					.19	.09	T.								T.	.04							1.20
Glenville	L. Kanawha		.23					.35	1.05					.33	.32	.40										.03							2.38
Grafton	Monongahela	.25						1.00		.05				.01	.10	.08									.03	T.							1.84
Green Sulphur Spgs.	G. Kanawha	.09	.03				.02	1.14							T.											* .13				.09			1.51
Hinton	do.		.10					.76	.26						.04	T.										T.	.12			.08			1.36
Holcomb	do.	.45	T.					1.46						T.		.35										.36				.16			2.78
Huntington	Ohio	.12	T.					.42							T.											T.	.24						0.78
Lewisburg	G. Kanawha	.15					T.	1.35						.11		T.										T.	.05			.10			1.76
Logan	Guyandotte	.60																															



TABLE 2.—Daily precipitation for November, 1912. District No. 3—Continued.

Stations.	Watershed.	Day of month.																														Total.		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
West Virginia—Con.																																		
Sutton	G. Kanawha				.38			1.98	T.					.21	.05											T.							2.62	
Terra Alta	Monongahela															.13												.10					2.35	
Union	G. Kanawha		.37						1.45	.30						.07	.30																1.07	
Valley Fork	do						.70																										0.80	
Webster Springs	do		.19					1.27							.54	.10																	1.50	
Wellsburg	Ohio	.12						.63							.05																		0.63	
Weston	Monongahela	.10	.18	.10				.56	.24	T.	T.				.10	.03		.04									.18			T.	T.		1.36	
Wheeling	Ohio	.01	.05					.42	.05	.01					T.	.05	T.									T.	.01							
Williamson	Big Sandy	.16	.04					.60	.26							.28	T.									T.	.02							
Ohio.																																		
Amesville	Ohio	.18	.02					.34						.10	.09															T.			0.73	
Bangorville	Muskingum	.15	T.			T.	.17	.37						.10	T.											.02				T.			0.81	
Bellefontaine	Great Miami	.26	T.				.77	.02					T.		.17	T.										T.			.06				1.28	
Bladensburg	Muskingum	.08						1.57							.08																		1.73	
Brilliant	Ohio	.20	T.			.30																											0.50	
Cadiz	do	.21						.21	T.	.16					.01	T.																	0.65	
Cambridge	Muskingum	.14						.21		.05																	.13						0.55	
Camp Dennison	Ohio	.24	T.			T.	.32	.22							.16		T.										.05	.01			T.		1.00	
Canal Dover	Muskingum							.41		.03					.10	T.											.05	.01		T.	.01		0.59	
Canton	do	.15	T.				.09	.54		.04				T.	.08	.10	.01																1.08	
Cardington	Scioto																																1.11	
Chillicothe	do		.13				.98																				.02						0.71	
Cincinnati	Ohio	.19					.38								.12																		1.57	
Circleville	Scioto	.23	T.				.35	.90							.06	.03																	1.17	
Clarington	Ohio	T.					T.	.40	.20						.40	.15																	1.01	
Columbus	Scioto	.12	T.				.76	.04							.09	T.																	0.52	
Coshocton	Muskingum	.01					.50									.01																	0.81	
Dayton (1)	Great Miami	.15	T.			T.	.57	.01							.05	.01																	1.05	
Dayton (2)	do	.21					.68								.08																		0.50	
Delaware	Scioto	.05	T.				.36	.05		.01					.03	T.	T.																0.89	
Demos	Ohio		.15				T.	.62	T.					.10																			0.26	
Dennison	Muskingum	.11					T.	.15	T.	T.					T.	T.	T.																1.50	
Frankfort	Scioto	.10						1.25																				.15					0.96	
Gallipolis	Ohio	.21						.35							.08	.22	.01																2.18	
Garrettsville	Mahoning	.24	.03	T.				.89	T.	.26					.02	.03	.27																1.56	
Granville	Muskingum	.12	T.				.18	.18							.08	T.																	0.92	
Gratiot	do	.14	T.					.74								.03																	2.40	
Green	Ohio	.75	T.				1.25								.15																		0.46	
Green Hill	Muskingum	.14	T.					.27								T.	T.																0.96	
Greenville	Great Miami	.45				T.		.24							.15	.04																	0.24	
Hamilton	do																																1.08	
Haydenville	Ohio							.24																									1.39	
Hillsboro	Scioto														.29	.02												.05	.03				1.77	
Ironton	Ohio	.39						.30							.11																		1.17	
Kenton	Scioto	.53					.37	.38								.22																	0.93	
Killbuck	Muskingum	.15						1.20	T.						.09	.07	T.																0.72	
Kings Mills	Little Miami	.30					T.	.61							.13	T.																	0.84	
Lancaster	Ohio	T.	T.				.20	.60							T.	T.																	1.36	
McConnellsville	Muskingum	.15					T.	.53							.10																		1.27	
Marietta	Ohio	.16					.03	.50							.16	.05																	0.52	
Marion	Scioto	.40	T.				.25	.30		.15					.02																		0.45	
Millfordton	Muskingum	.10	T.					.98							.05	.12																	1.36	
Milligan	do	.16	T.				T.	.32							.01																		1.44	
Millport	Ohio	.09	T.					.33							T.	.01	.01																0.90	
Nelle	Muskingum	.38						.98																										1.05
Mew Berlin	do	.25						.75							.10	.05	.15																1.63	
New Waterford	Ohio	.27	T.							.53																							4.39	
O. S. University	Scioto	.16	T.				.44	.38							.05	.02																	0.38	
Oregonia	Little Miami																																1.29	
Pataskala	Muskingum	.13	T.			T.	.16	1.16							.10	.06																	1.17	
Peebles	Ohio	.19	T.				.07	.85							.17	T.	.03																1.27	
Philo (1)	Muskingum	.12						.26	T.						T.	T.																	0.90	
Piqua	Great Miami	.43	T.				.10	.45							.16	.08																		



TABLE 2.—Daily precipitation for November, 1912. District No. 3—Continued.

Stations.	Watershed.	Day of month.																														Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Indiana—Continued.																																
Hickory Hill	W. Fork, White	.50				.01	.48						.25												.02							1.26
Huntingburg	Wabash	.90					.17																	.05								1.12
Huntington	do.	.95				T.	.98	.05					T.	.06	.03									T.	.05							2.12
Indianapolis	W. Fork, White	.11				T.	.70						T.	.31	.05	T.								T.	.04			T.				1.21
Jeffersonville	Ohio	.24				.02	.43						T.	.19										T.								0.88
Judyville	Wabash	.73				.77	.51						T.	.47										T.	.01							2.49
Kokomo	do.	1.41					.68	.09						.12											.06							2.36
La Fayette	do.	.93			.03	.47	.73	.02					.05	.43										T.	.05			T.				2.71
Logansport	do.	1.22	.07				.76	.66						.61											.10							3.42
Madison	Ohio	.21				.02	.41	.02						.08											.09							0.83
Marengo	do.		.01		T.	T.	.84							.78											.01							1.64
Marion	Wabash	.81				.02	.65							.08	.09									.03								1.80
Mauzy	E. Fork, White	.20				T.	.39						T.	.19	T.									T.	.14			T.				0.92
Monticello	Wabash	1.10					.82	.70						.80											T.							3.42
Moore Hill	Ohio	.17					.35							.24											.05							0.81
Mount Vernon	do.	.70				T.	.04	.06						.28											T.							1.08
Nashville	E. Fork, White					T.	.50						.05	.05	T.									T.	.03							0.63
Paoli	do.	.28					.34							.09											T.							0.71
Princeton	Wabash	.74					.42						.34	.19											T.							1.69
Richmond	Whitewater	.09				T.	.22						T.	.16	.04									.01	.09				T.			0.61
Rochester	Wabash	.98				T.	.21	.09	.10				T.	.52	.07									T.	.01							2.98
Rockville	do.	1.81				T.	.54						T.	.22										T.	.01							2.58
Rome	Ohio	.73		T.	T.		.15							.20											.02							1.10
Salamonia	Wabash	.35				T.	.43	.03					.02	.10	.05									.04	.50							1.52
Salem	Ohio	.35			T.	T.	.16						T.	.60											T.			T.				1.11
Scottsburg	E. Fork, White	.26					.12							.26											T.							0.64
Seymour	do.	.17				T.	.25							.13										T.	.01			T.				0.56
Shelbyville	do.	.34					.48						.02	.20											.15							1.19
Shoals	do.	.68				T.	.19	.10						.36											T.							1.33
Terre Haute	Wabash	.03			.02	.03	.40						.67	T.											.01							1.16
Veederburg	do.	1.05			.06	.40	.60	.06					.03	.30										T.	.10							2.60
Vevay	Ohio	.25				T.	1.00	T.						T.	T.										.10							1.35
Vincennes	Wabash	.75					.70	.05						1.00	T.										T.							2.50
Washington	W. Fork, White	.75				T.	.43						.34	.27											T.		T.					1.79
Whitestown	do.	.94	.02				.35							.27	.01										T.		.05		T.			1.64
Winona Lake	Wabash	1.16				.40	.93	.08					T.	.33	.15									.04	.16							3.25
Worthington	W. Fork, White	.72				T.	.72	.05					.31	.25	.15										.05							2.10
Illinois.																																
Albion	Wabash	.65					1.07							.23											.02							1.97
Casey	do.					T.	.51						T.	.80																		1.31
Charleston	do.	.36				T.	.22	.42					T.	.22	T.										T.							1.22
Danville	do.	.64				.01	.85	.35	.01				T.	.44										.01	.08							2.39
Equality	Ohio	.05			.05	1.05							.42																			1.57
Fairfield	Wabash	1.18				T.	1.20	.02					.15	.30	.02										T.							2.87
Flora	do.	.67				T.	1.01							.42																		2.10
Golconda	Ohio	.78					.30						.30	.04																		1.42
Hoopeston	Wabash	.62				.70	.64	.01					.01	.92											.07							2.97
McLeansboro	Ohio	.84				1.32							.16	.33																		2.65
Metropolis	do.	1.00					.35			.10																						1.45
Montrose	Wabash	.58			.02	.14	.49	T.					.04	.28											T.							1.55
Mount Carmel	do.	.66				T.	.56	.06						.52											T.							1.80
New Burnside	Ohio	.73				T.	.30	.22					.16	.17																		1.58
Newton	Wabash	.26				.04	.60	T.					.01	.34																		1.25
Olney	do.	T.					.90	.04						.37																		1.31
Palestine	do.	.96	T.			T.	.93	.05					.25	.40											T.							2.59
Paris	do.	.73				T.	.57	.15						.70	T.										T.							2.15
Philo	do.	.26				1.03	.17							.28											T.							1.74
Rantoul	do.	.74				.77	.61	.02					T.	.58											.01							2.73
Rileyville	Ohio	.69					.98						.16	.55																		2.38
Shawneetown	do.	.82					.15							.26																		1.23
Tuscola	Wabash	.50				.94	.29							.23											T.	T.						1.96
Urbana	do.	.07				1.17	.08	T.					.20	.25										T.	T.							1.77
Kentucky.																																
Alpha	Cumberland	.55					.45	T.																	.05							1.05
Anchorage	Ohio	.35					1.02						T.												.02							1.39
Bardstown	Salt	.34	T.					.75						.22	.02												</					



TABLE 2.—Daily precipitation for November, 1912. District No. 3—Continued.

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Kentucky—Contd.																																	
Shelby City.....	Kentucky.....	.40	.04				.05	.91						.22											T.							1.62	
Shelbyville    .....	Salt.....	.15				T.	.02	.74						.08											T.	.10						1.09	
Taylorsville.....	do.....		T.				.75	.06					T.	.17	T.										.03				T.			1.01	
Williamsburg    .....	Cumberland.....	.37						.70	.10																	.02				T.			1.01
Williamstown    .....	Licking.....	.35						.87							.03												.01			T.			1.19
Tennessee.																																	
Ashwood.....	Tennessee.....						.25																		T.				T.			0.25	
Benton.....	do.....	.48					T.	1.10						.10														.20				1.88	
Birds Bridge    .....	do.....	.15						1.20	.05					.16															.37			1.93	
Bluff City    .....	do.....	.04	.24					1.28	.33					.06															.21			2.16	
Byrdstown.....	Cumberland.....	.38						.52																	T.				.21			0.90	
Carthage    .....	do.....	.61						1.31																	T.							1.92	
Cedar Hill.....	do.....	.60					.30	T.					T.												.05							0.95	
Celina    .....	do.....	.64						.61																		T.	T.					1.25	
Charleston    .....	Tennessee.....	.10						1.36																					.15			1.61	
Chattanooga.....	do.....	.34					.21	.01																				.08				0.64	
Clarksville.....	Cumberland.....	.69					.21						T.	T.											.02							0.92	
Clinton    .....	Tennessee.....	.50						1.01						.26															.24			2.01	
Crossville.....	do.....	.35					.13	.27	T.					.70														.02	.07			1.54	
Dandridge    .....	do.....	.20					1.00							.14															.10			1.44	
Decatur.....	do.....	.47					.01	.50						.02																	T.	1.14	
Dickson.....	Cumberland.....	.50					.28																			T.							0.78
Dover.....	do.....	1.05					.16						T.													T.						1.21	
Dunlap.....	Tennessee.....	.14					.43	.10						.18														.05				0.90	
Elizabethton    .....	do.....		.22					.02	.10					.22															.25			0.81	
Erasmus.....	Cumberland.....	.32					.28	.14						.51												.04			.02			1.31	
Florence.....	do.....	1.05					1.10	.80																		.02						2.97	
Franklin.....	do.....	.55					.57																									1.12	
Halls Hill    .....	do.....	1.20						1.25						T.													T.					2.45	
Harriman.....	Tennessee.....						.48							.07																		1.39	
Hohenwald.....	do.....	.84					.46						T.															.04				1.38	
Iron City.....	do.....	.88							.84																			.14				1.26	
Jefferson City    .....	do.....	.28						1.17	.22						.40											T.			.30			2.35	
Johnson City.....	do.....	.26					.41						.05	.01												T.						1.14	
Johnsonville.....	do.....	.66						.52						.37													T.		.04			1.51	
Kingston    .....	do.....	.58																														1.47	
Knoxville.....	do.....	.40					.14	.74						.12												T.		.07				1.93	
Lebanon.....	Cumberland.....						1.40	.53					T.	T.												T.		T.				2.07	
Lewisburg.....	Tennessee.....	.68					.97	.28						.10														.04				1.67	
London    .....	do.....	.76					.72							.08															.11			1.67	
Lynnville.....	do.....	.76					1.18																					.04				1.94	
McGhee    .....	do.....	.46						1.18																			T.		.28			1.92	
McMinnville.....	Cumberland.....	.40						.60						.75												T.						1.75	
Maryville.....	Tennessee.....																																
Mountain City.....	do.....	.31						.70						.18															.30	.10		1.50	
Nashville.....	Cumberland.....	.03					.42	T.						.20												T.						0.65	
Newport    .....	Tennessee.....	T.	.34					.95	.18						.10														.53			2.10	
New River    .....	Cumberland.....		.38											.32																		0.73	
Palmatto.....	Tennessee.....	.50					.64	.35																								1.49	
Perryville.....	do.....	1.66					.34					.07																				2.07	
Pinewood.....	do.....						.28						T.																			0.28	
Rogersville    .....	do.....	.27						.94	.07						.10															.20		1.58	
Rugby.....	Cumberland.....	.45					.15	.40						.32													.10					1.42	
Savannah.....	Tennessee.....	.70					.33		1.00					.23																		1.26	
Sevierville.....	do.....	.32						.63						.07															.15	.15		1.60	
Sewanee.....	do.....																															0.83	
Sparta.....	Cumberland.....	1.10					T.	.70																					.03			1.85	
Springville.....	Tennessee.....	1.04					.26						.07	.20																		1.57	
Tazewell    .....	do.....	.45	T.					.75							.07															T.		1.27	
Tullahoma.....	do.....	.48					.41	.29						1.07																		2.31	
Walling    .....	Cumberland.....	.34						.52						.40																		1.26	
Waynesboro.....	Tennessee.....	1.05					.00	T.					.05	.05																		1.75	
Wildersville.....	do.....	.57					.04						.07																			1.28	
Worsham    .....	Cumberland.....						.65							.09																		0.79	
Yukon.....	Tennessee.....						.33	.12						.83													.05					1.28	
Alabama.																																	
Bridgeport    .....	Tennessee.....	.21							.73																				.05			0.99	
Decatur    .....	do.....	.35						.74						.30															.02			1.41	
Florence    .....	do.....	.30						.53						.12															.12			1.07	
Guntersville    .....	do.....	.38						.65						T.	.08														.15			1.26	
Madison.....	do.....	.60						1.00						.55															.30			2.45	
Riverton    .....	do.....	.76					.03		.29					.16																		1.24	
Scottsboro    .....	do.....	.47					.05																					T.	.10	T.		0.62	
Tusculumbia    .....	do.....	.35						.30						.03																.18		.86	
Georgia.																																	
Diamond.....	Tennessee.....	.43					.13	1.06						.68												T.			.08	.04		2.44	
North Carolina.																																	
Andrews.....	Tennessee.....	.37					.05	.91						.30															.10			1.73	
Asheville.....	do.....	.15	T.				.71	.94						T.															.18	.02		2	



TABLE 2.—Daily precipitation for November, 1912. District No. 3—Continued.

Stations.	Watershed.	Day of month.																														Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Virginia.																																
Blacksburg.....	Kanawha.....	.15					.13	1.17						.42											T.				.10			1.97
Burkes Garden.....	Tennessee.....	.21	T.				T.	1.04						.25		T.									T.					.40		1.90
Elk Knob.....	do.....	.55	.02					.85	.01					.32	.01										T.				.05	.05		1.86
Ivanhoe   .....	Kanawha.....	.01	.03				T.	.85	.10						.44										T.	T.			.33			1.76
Max Meadows.....	do.....	.20	T.				.15	.85						.13		T.									T.				.50	T.		1.83
Mendota   .....	Tennessee.....	.15	.10				.08	.20	.80						.15														.18			1.66
Mountain Lake.....	Kanawha.....	.20					.40	1.90						.40															.30			3.20
Radford   .....	do.....							1.32							.46														.08			1.86
Speers Ferry   .....	Tennessee.....	.40	.04					.72	.12					.12												T.			.20			1.60
Wytheville.....	Kanawha.....	.17	T.				.15	1.07						.10		T.									.01				.18	.06		1.74

\* Precipitation included in that of the next measurement.

† Separate dates of falls not recorded.

|| Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.



TABLE 3.—Maximum and minimum temperatures for November, 1912. District No. 3, Ohio Valley.

Date.	Pennsylvania.				West Virginia.																Ohio.							
	Greenville.		Pittsburgh.		Charleston.		Elkhorn.		Elkins.		Glenville.		Huntington. §§		Morgantown.		Parkersburg.		Wheeling. §§		Canton.		Cincinnati.		Columbus.		Dayton.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	59	39	62	37	69	45	65	45	63	37	.....	45	60	48	65	35	65	40	64	41	60	34	67	34	62	32	65	31
2....	42	30	37	32	62	33	49	31	37	30	62	20	40	32	45	29	40	30	40	29	39	30	40	31	37	27	38	29
3....	44	30	43	32	50	31	61	24	43	23	65	32	46	25	45	25	46	29	49	26	45	25	50	26	45	26	44	26
4....	51	24	53	35	63	26	63	20	59	17	64	34	57	24	55	29	57	26	56	24	51	28	55	33	53	32	52	35
5....	63	40	63	49	69	39	64	32	64	35	70	34	67	25	61	49	63	51	67	25	63	41	62	49	58	43	56	44
6....	69	42	70	54	70	48	65	47	66	39	62	32	73	51	69	50	73	50	72	45	70	49	68	57	70	54	66	54
7....	61	45	62	46	68	50	64	49	59	44	64	31	58	56	64	50	62	44	58	43	57	43	57	44	56	37	55	39
8....	48	37	52	40	63	45	59	37	55	39	62	32	61	38	53	48	59	36	56	39	52	35	59	34	56	31	56	34
9....	45	35	44	37	60	42	58	38	45	32	59	40	52	40	52	33	48	37	45	38	42	35	54	40	45	40	49	36
10....	49	35	57	38	62	34	68	33	63	29	70	29	68	34	61	35	66	36	62	36	57	35	69	42	64	40	66	45
11....	65	35	67	53	73	37	70	29	68	43	77	37	72	40	68	54	72	56	72	42	68	40	72	53	70	48	71	52
12....	67	40	68	56	73	42	70	37	69	41	78	37	72	47	69	54	72	50	72	41	67	48	71	55	65	50	67	53
13....	66	50	65	41	71	50	68	40	67	44	66	46	65	47	65	57	64	43	68	41	63	40	64	42	69	40	62	39
14....	50	33	42	34	62	42	60	32	44	32	58	38	45	40	57	39	46	37	44	39	40	32	44	36	40	33	39	33
15....	38	33	36	32	45	32	47	28	32	29	42	31	41	35	39	30	38	31	37	33	32	29	46	34	38	26	43	30
16....	46	32	45	31	50	26	45	21	44	27	52	22	48	23	44	30	47	25	50	27	47	23	53	28	49	26	50	29
17....	41	35	41	36	48	28	46	26	39	28	47	24	48	25	41	32	47	35	46	27	41	35	50	33	47	33	48	30
18....	47	28	45	33	54	28	47	24	45	28	51	32	53	31	46	31	50	33	52	28	46	25	56	35	52	30	53	31
19....	55	28	57	38	68	30	55	25	59	26	62	34	52	30	57	37	61	39	61	30	57	34	63	39	58	34	59	36
20....	60	28	60	44	68	38	63	28	62	33	68	32	64	39	60	45	64	45	64	38	61	36	68	43	62	41	63	40
21....	62	31	63	47	67	34	60	28	61	26	65	28	61	31	62	46	63	37	67	34	62	40	63	43	60	42	59	43
22....	55	29	56	43	63	37	60	32	60	31	70	29	59	31	57	47	58	34	61	41	55	34	57	39	54	38	54	38
23....	51	23	55	36	62	32	58	30	58	24	63	24	58	28	57	31	56	29	55	27	51	28	54	34	51	33	50	35
24....	45	31	42	28	62	30	50	24	39	27	54	30	37	30	51	26	40	32	42	29	39	27	39	28	34	28	35	26
25....	35	28	35	28	44	30	56	25	31	26	37	30	40	31	34	27	38	32	37	30	33	27	37	30	36	30	33	27
26....	37	28	41	31	46	33	40	20	40	29	49	32	45	33	42	30	44	34	45	32	35	30	45	34	39	30	40	32
27....	36	25	36	28	45	27	38	24	36	27	43	24	39	28	38	27	39	29	40	27	36	24	39	28	38	25	35	25
28....	36	16	34	25	53	26	33	22	28	18	40	22	38	26	36	23	37	25	41	24	36	19	39	24	35	22	36	21
29....	42	23	45	25	52	29	47	14	49	13	49	15	51	23	46	30	49	25	44	24	42	25	50	29	46	26	45	28
30....	49	21	49	34	53	29	49	25	50	25	58	23	50	27	49	33	52	28	57	27	50	24	53	30	49	29	52	30
Mns..	50.5	31.8	50.8	37.4	59.8	35.1	55.9	29.7	51.2	30.1	58.5	30.6	54.0	33.9	52.9	37.1	53.9	35.9	54.1	32.7	49.9	32.5	54.8	36.9	51.0	34.2	51.4	35.0

Date.	Ohio.				Indiana.								Philo, Ill.		Kentucky.													
	Marion.		Waverly.		Butler-ville.		Evansville.		Indianapolis.		Kokomo.		Rockville.		Worthington.		Beattyville. §§		Bowling Green. §§		Earlington. §§		Greensburg. §§		Lexington.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1....	60	37	67	42	64	39	46	38	43	32	48	35	49	36	62	38	42	34	51	46	41	40	46	42	53	43	67	37
2....	50	23	44	25	43	25	43	35	39	27	38	24	39	24	47	22	39	25	40	30	45	33	46	37	48	33	37	29
3....	47	21	50	20	50	21	51	33	47	26	47	20	51	21	49	22	50	22	56	18	56	20	57	23	57	18	46	25
4....	52	30	56	21	56	34	58	39	55	34	55	30	57	38	56	37	60	38	67	19	55	23	59	35	64	28	55	33
5....	59	39	65	42	59	46	65	52	58	45	60	44	58	42	60	44	59	40	70	27	65	33	69	42	78	48	66	49
6....	68	47	75	45	65	55	62	50	59	49	58	50	60	51	60	53	58	45	78	35	70	48	65	55	74	57	69	55
7....	58	43	60	47	59	45	53	44	55	41	56	42	57	44	56	46	53	36	57	46	67	41	53	42	63	49	55	41
8....	59	30	61	31	61	30	64	42	57	37	56	32	59	34	60	33	54	33	66	31	65	38	65	34	70	29	59	35
9....	49	37	54	38	57	34	61	41	52	36	52	32	55	32	56	31	55	28	63	35	65	32	68	30	67	32	54	37
10....	64	39	70	31	68	40	72	48	68	46	67	41	71	43	70	38	72	43	75	27	74	34	78	34	78	34	68	40
11....	70	45	74	48	75	53	73	52	70	56	70	53	72	51	70	50	72	51	81	31	77	43	78	54	82	41	72	48
12....	65	44	71	45	70	51	67	54	63	56	66	54	62	52	62	51	64	53	81	32	72	43	70	55	77	39	70	50
13....	60	42	63	47	64	42	54	41	59	37	60	39	61	39	64	42	61	39	66	34	51	46	57	45	59	49	63	42
14....	43	33	48	38	44	34	45	36	38	34	40	32	42	34	44	36	42	27	47	42	48	33	45	33	45	34	42	33
15....	40	23	44	28	49	24	49	30	44	28	43	24	45	22	46	23	43	19	49	34	51	25	51	22	47	23	42	33
16....	49	20	52	19	48	22	56	34	52	30	51	23	53	24	54	22	49	23	59	16	59	20	62	22	65	20	51	28
17....	46	32	50	26	52	24	51	33	48	30	47	26	49	26	50	21	48	22	55	20	52	30	57	24	58	21	47	30
18....	53	22	56	25	57	29	57	34	55	33	55	28	59															



TABLE 3.—Maximum and minimum temperatures at selected stations for March, 1912. District No. 3—Continued.

Date.	Kentucky.						Tennessee.												Decatur, Ala. §§		Asheville, N. C.		Virginia.					
	Louisville.		Mays- ville. §§		Williams- burg. §§		Chatta- nooga.		Johnson City. §§		Knoxville.		Nashville.		Palmetto.		Sparta.						Waynes- boro.		Blacks- burg.		Wythe- ville.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1....	60	39	52	44	75	48	67	42	63	52	66	41	62	39	57	39	68	43	70	42	54	53	62	39	64	45	65	38
2....	42	32	40	29	76	25	46	36	43	37	45	32	44	33	48	33	51	35	45	36	48	30	39	29	45	35	38	26
3....	50	27	54	20	70	30	52	31	51	20	49	26	52	26	57	23	54	21	55	20	53	24	53	23	47	24	48	24
4....	56	35	57	23	71	33	62	34	63	21	62	28	58	36	61	33	65	26	61	36	64	26	57	26	55	18	58	20
5....	67	52	71	25	73	35	63	47	69	23	66	35	69	45	68	46	71	38	68	48	68	32	63	30	68	22	65	24
6....	66	56	73	49	72	34	65	59	67	29	70	50	64	54	68	60	67	54	66	54	66	45	58	50	59	44	58	46
7....	56	43	55	53	68	35	60	48	58	56	60	49	55	43	62	45	62	50	61	45	58	51	57	47	60	56	59	46
8....	62	40	61	31	75	32	68	40	60	38	66	42	66	35	71	32	65	39	70	31	68	38	63	41	59	38	56	38
9....	60	42	58	32	80	30	67	42	62	39	62	42	61	41	66	32	62	30	67	29	63	31	55	39	59	39	51	34
10....	73	44	72	33	78	32	75	37	63	.....	70	34	75	40	74	40	73	30	74	34	73	34	67	32	66	37	62	32
11....	74	54	76	45	79	29	76	53	73	.....	74	48	75	56	75	51	75	34	76	51	74	40	74	37	70	36	66	40
12....	70	59	75	48	78	30	73	45	73	34	73	40	69	55	70	50	74	36	70	55	74	42	75	36	73	42	67	42
13....	67	45	60	49	79	30	67	48	73	39	67	48	68	45	66	47	66	50	70	47	63	50	69	48	68	38	68	40
14....	45	38	43	40	75	32	58	39	51	39	55	40	50	37	59	34	65	33	61	30	50	30	48	35	55	40	50	35
15....	46	34	45	34	68	20	51	35	43	34	48	34	51	30	52	26	48	26	54	22	53	31	40	31	40	32	35	30
16....	55	30	55	20	62	18	57	33	54	22	55	28	56	28	59	21	57	22	60	19	60	26	57	29	48	26	49	25
17....	52	33	52	20	60	19	57	35	54	23	54	29	54	35	64	26	53	24	56	24	58	27	50	27	47	34	47	32
18....	56	34	60	25	61	18	58	31	54	25	56	28	56	27	61	20	56	20	63	19	38	24	54	26	49	32	49	30
19....	66	42	66	25	60	20	66	31	59	24	62	28	68	30	68	31	66	22	68	26	67	24	59	26	61	25	55	28
20....	68	48	70	34	58	21	64	34	59	25	65	36	67	40	68	35	66	25	69	39	64	27	63	32	64	32	59	31
21....	66	45	67	33	59	19	62	39	60	29	61	33	69	35	70	36	66	29	70	47	67	29	60	28	59	22	60	26
22....	59	42	62	31	62	19	62	40	63	30	63	36	60	41	67	38	66	34	67	43	68	31	61	30	62	28	58	35
23....	54	36	59	26	53	21	64	41	60	32	62	37	58	37	64	31	56	30	62	30	65	36	62	34	55	26	57	30
24....	38	29	37	28	53	20	44	33	38	31	42	33	40	31	46	26	42	24	46	21	45	30	42	31	40	30	44	26
25....	43	31	39	28	55	21	47	31	40	31	44	33	46	30	48	23	44	30	58	17	47	24	41	29	33	29	33	25
26....	46	34	58	29	53	22	51	29	44	22	48	28	49	34	52	24	49	20	52	22	53	24	44	25	44	23	39	25
27....	40	27	39	23	50	19	40	30	40	24	38	26	40	28	42	25	41	20	39	25	37	27	39	24	40	25	39	25
28....	41	23	42	17	42	18	43	27	36	25	38	26	43	22	42	16	39	16	44	15	41	20	29	20	28	25	28	12
29....	53	33	54	17	52	16	51	24	43	11	49	21	53	30	52	26	46	17	54	25	47	20	49	12	45	8	44	12
30....	49	35	58	23	60	23	54	28	50	13	53	25	60	36	62	27	61	18	62	26	57	24	56	23	54	32	54	28
Mns..	56.0	38.7	57.0	31.1	65.2	25.6	59.0	37.4	55.5	29.6	57.4	34.5	57.9	36.6	60.6	33.2	59.1	29.9	61.3	32.6	58.1	31.7	54.9	31.3	53.9	31.4	52.0	30.2

a, b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.



## CLIMATOLOGICAL DATA FOR NOVEMBER, 1912.

## DISTRICT No. 4, THE LAKE REGION.

Prof. HENRY J. COX, District Editor.

## GENERAL SUMMARY.

November, 1912, in the Lake Region, was unusually pleasant. Conditions were favorable for all kinds of outdoor work, and, with the exception of a few days, for the movement of lake vessels. Sunshine was considerably above the average in practically all portions of the district, relative humidity was in general somewhat lower than ordinary for November, and days with rain or snow or dense fog were comparatively infrequent. The wind movement of the month was slightly higher than the monthly normal, but heavy storms were few in number as compared with average conditions for this season of the year.

The period was in distinct contrast to November, 1911, which was described as "one of the stormiest and most disagreeable months of that name on record," with excessive cloudiness, low temperatures, general high winds, destructive local storms, and one of the severest cold waves on record for the season.

The following table summarizes the chief features of meteorological interest in the various portions of the district:

Portions of States.	Mean temperature.		Mean daily range.		Mean precipitation.		Greatest precipitation in 24 hours.	Mean snowfall.	With .01 or more.	Number of days.			Prevailing wind direction.
	Departure.		Departure.		Departure.					Clear.	Partly cloudy.	Cloudy.	
Minnesota.....	31.6	+4.3	15.1	0.42	-1.23	0.63	2.3	3	13	9	8	w.	
Wisconsin.....	36.4	+2.4	13.0	1.41	-0.53	1.60	3.5	4	13	7	10	sw.	
Illinois.....	42.6	+3.6	13.2	1.84	-0.39	1.13	0.3	5	14	6	10	sw.	
Indiana.....	41.6	+1.8	15.2	2.30	-0.28	1.49	0.8	6	12	7	11	sw.	
Upper Michigan.....	33.7	+1.8	11.4	1.63	-0.87	1.57	10.2	8	8	7	15	nw.	
Lower Michigan.....	38.6	+1.6	12.4	2.99	+0.46	2.40	5.5	8	9	8	13	sw.	
Ohio.....	41.8	+1.9	14.0	1.27	-1.43	1.11	1.1	6	12	7	11	sw.	
Pennsylvania.....	43.7	+2.6	11.0	2.17	-1.44	0.83	15.3	12	4	4	22	sw.	
New York.....	39.3	+3.0	12.8	3.47	+0.72	2.12	11.4	12	8	9	13	sw.	
Vermont.....	36.9	+2.8	15.3	3.57	+0.47	1.87	6.9	11	7	8	15	s.	

## TEMPERATURE.

As was the case with the two months immediately preceding, the mean temperature was above normal in all portions of the district. The departures ranged between +1° and +2° over the middle sections, increasing eastward to about +3° in the Champlain Valley, and westward to somewhat over +4° in the region of western Lake Superior. As a rule the mean daily range was quite small, being generally less than 15°, and the extremes were not exceptional in any section. The absolute range for the district as a whole was 84°, from a maximum of 76° at North Royalton, Ohio, to a minimum of -8° at Watersmeet, Mich.

The first few days of the month were cool, but on the 4th warm weather set in and continued generally until the 14th. This warm period culminated on the 6th over the eastern and on the 11th over the central and western portions of the district, when daily mean temperatures rose to values about 15° above the seasonal averages. A brief cool period occurred on the 13-17th, but was followed immediately by higher temperatures which lasted until the 25th. On this date the third cool spell became general, the lowest temperatures of the month being experienced in all portions of the Lake Region on the 28th or 29th. On the 30th, however, the weather moderated, and the month closed with pleasant temperatures throughout the district.

## PRECIPITATION.

Precipitation was irregularly distributed, being above normal over the highlands of New York, the Vermont section, and much of the Lower Michigan Peninsula, and deficient elsewhere throughout the Lake Region. To the west of Lake Superior the month was the driest November on record, while in the lower Champlain Valley and in portions of the upper St. Lawrence Valley precipitation was abundant, and in several places approached or exceeded all previous records for the period. Even in neighboring localities there was a wide variance in the amounts of precipitation received during the month: In Minnesota the range in inches was from 0.06 at Two Harbors to 0.71 at Cloquet; in Wisconsin, from 0.15 at Superior to 3.65 at Plum Island; in Lower Michigan, from 0.92 at Traverse City to 6.22 at Harrisville; and in New York, from 0.76 at Avon to 6.50 at Canton. In point of time, precipitation was more or less general on the 1st, 5-8th, 12-14th, and 23d-28th.

*Snow.*—Except for a few instances, generally of inconsiderable amounts, the snowfall of the month was confined to the precipitation period of the last decade, and while the monthly totals were for the most part less than the normal for November, there were several notable exceptions. On the 13-14th heavy falls of snow occurred over the northern portion of Lower Michigan, and in the higher lands of this portion of the State the amounts reached from 10 to 12 inches for the month. Over the eastern sections of the district the falls of the last week brought the total up to considerably more than the usual amount, and in some localities exceeded all records for several years. At Canton, N. Y., 16.8 inches of snow fell during the 12 hours ending at 8 a. m. of the 27th, at which time there were 23.8 inches on the ground, the greatest depth measured at that station for more than 7 years.

*Rivers.*—Moderately heavy showers during the first half of the month caused a general rise in the Saginaw



and Grand watersheds, and until the 17th river conditions in these basins were quite threatening.

#### STORMS AND HIGH WINDS.

The maximum wind velocities of the month occurred on the 1st over the eastern sections, on the 13-14th over southeastern Michigan and northwestern Ohio, and on the 23d-24th over the Lake Michigan and northern Lake Huron sections. In the Lake Superior district the highest winds of the month at the various stations were not confined to any particular date, and a few stations elsewhere reported the highest velocities on the 8-9th.

The following reports of storms and damage have been received:

*Alpena, Mich.*—There were two storms of great severity. The first began on the 12th and lasted until the 14th, the wind reaching a velocity of 38 miles per hour on the 13th. The gale was accompanied by heavy snow after 11 a. m. of the 13th. At Thunder Bay Island, Mich., the board walk leading to the watch house was swept away by heavy seas, and the entire northern end of the island was inundated. Great damage to the nets of local fishermen resulted from the storm, estimated to reach at least \$15,000. The waters of the lake were deeply stirred, and had a milky appearance at Thunder Bay Island. The liner *City of Mackinac* left Cheboygan on the morning of the 13th, and reached Alpena after a rough trip of 13 hours. She was badly battered by the waves, a large hole being stove in her quarter-deck, the beams of her main deck sprung, and a number of windows broken. Some damage or delay was reported by other vessels also, and 40 craft took refuge in Thunder Bay during the storm.

The other storm occurred on the 23d and 24th, the maximum wind velocity being 42 miles from the east on the 23d. While riding out the storm at anchor the schooner *Robert C. Went* lost her deck load of 2,000 feet of lumber.

*Cleveland, Ohio.*—On the 9th, during the high westerly wind, the barge *Chattanooga*, in tow of the steamer *Frontenac*, was forced to heave to about 3 miles east of the harbor entrance. The barge, after a hard struggle with the high wind and heavy sea, was rescued and brought safely to harbor.

#### MISCELLANEOUS.

*Aurora.*—A well-defined aurora was observed at Berne, Ind., on the night of November 14.

*Thunderstorms.*—A few thunderstorms were reported in the southern portions of the district during the course of the month. At Buffalo, the unusual phenomenon of thunder and lightning during a snowstorm was observed on the afternoon of the 26th.

*Ice and navigation.*—In ponds and small lakes in the vicinity of extreme western Lake Superior the ice was thick enough for skating during the greater portion of the month after the 3d. On the Great Lakes, however, while some ice was reported from the northern sections during the last part of the month, it was thin and offered no hindrance to navigation. Some lines of barges began to go into winter quarters after the 14th, but otherwise the passage of vessels continued throughout the month.

#### NOVEMBER, 1912, LAKE LEVELS.

The following data are from the report of the United States Lake Survey:

	Lake Superior.	Lakes Michigan and Huron.	Lake Erie.	Lake Ontario.
	Feet.	Feet.	Feet.	Feet.
Above tidewater at New York.....	602.38	580.43	571.90	246.08
Above or below:				
Stage of October, 1912.....	-0.21	-0.07	-0.22	-0.09
Stage of November, 1911.....	+0.35	+1.05	+0.77	+1.58
Mean of stage November last ten years..	-0.22	+0.08	+0.07	+0.51
Highest recorded stage.....	-1.13	-2.49	-1.77	+1.74
Lowest recorded stage.....	+0.88	+1.25	+1.20	+2.67
Probable change during December.....	-0.20	-0.20	-0.10	-0.20



TABLE 1.—Climatological data for November, 1912. District No. 4, Lake Region.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.					Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of overcast cloudy days.			
Minnesota.																					
Cloquet.....	Carlton.....	800	1	30.4	.....	58	10	- 6	28	41	0.71	.....	0.55	3.7	4	14	6	10	nw.	W. H. Kenety.	
Duluth.....	St. Louis.....	1,133	41	32.0	+ 2.7	58	10	- 6	27	26	0.21	- 1.37	0.16	1.8	4	6	14	10	w.	U. S. Weather Bureau.	
Floodwood.....	do.....	1,257	6	.....	.....	.....	.....	.....	.....	.....	0.63	.....	0.63	3.0	1	20	0	10	.....	M. H. Schussler.	
Stephens Mine.....	do.....	1,500	5	30.5	.....	57	10	- 5	28	37	0.49	.....	0.23	2.7	4	20	4	6	w.	Oliver Iron Mining Co.	
Two Harbors.....	Lake.....	614	18	34.2	+ 3.6	58	10	- 3	28	32	0.06	- 1.53	0.06	0.6	1	5	22	3	s.	G. W. Watts.	
Virginia.....	St. Louis.....	1,434	18	30.8	+ 6.5	56	10	- 2	28	33	0.40	- 0.78	0.25	2.0	3	12	8	10	nw.	Oliver Iron Mining Co.	
Wisconsin.																					
Appleton.....	Outagamie.....	795	11	36.9	+ 1.3	62	11	- 16	28	22	1.24	- 0.51	0.76	2.0	6	21	1	8	s.	Wm. O. Thiede.	
Ashland.....	Ashland.....	615	21	35.4	+ 3.7	62	10	- 13	25	41	0.71	- 0.82	0.45	3.5	5	16	5	9	w.	Sam Wheeler.	
Bayfield.....	Bayfield.....	635	3	35.2	.....	58	11	- 13	28	30	0.20	.....	0.20	2.0	2	13	6	10	nw.	F. Kern.	
Cecil.....	Shawano.....	804	14	36.5	+ 4.7	60	11	- 12	28	30	1.58	- 0.03	0.88	5.0	5	15	9	6	sw.	Louis W. Schmidt.	
Cornucopia.....	Bayfield.....	640	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Reed Fruit Co.	
Crandon.....	Forest.....	1,060	17	32.0	+ 3.2	56	10	- 4	28	27	.....	.....	.....	.....	13	4	13	.....	.....	Frank Shoemaker.	
Florence.....	Florence.....	1,293	21	31.5	+ 1.6	58	10	- 6	28	33	0.80	- 1.31	0.26	5.0	5	13	2	14	nw.	Fred S. Evans.	
Fond du Lac.....	Fond du Lac.....	800	26	37.4	+ 3.5	64	11	- 15	28	30	1.95	+ 0.24	0.88	3.5	6	19	5	6	s.	Edward A. Seeley.	
Grand River Locks.....	Marquette.....	770	16	37.0	.....	64	11	- 12	28	32	1.01	- 0.75	0.73	T.	4	19	4	7	nw.	Jerry Parkinson.	
Green Bay.....	Brown.....	617	26	37.2	+ 4.7	62	11	- 19	28	23	1.15	- 0.81	0.72	1.0	5	4	10	16	s.	U. S. Weather Bureau.	
High Falls.....	Marquette.....	1,125	0	33.6	.....	60	5	- 12	30	38	1.33	.....	0.90	3.5	4	19	3	8	w.	No. Hydro-Elec. Pow. Co.	
Iron River.....	Bayfield.....	1,096	3	33.8	.....	61	10	- 5	28	39	1.20	.....	0.30	10.0	5	17	2	11	s.	Winfield E. Tripp.	
Kewaunee.....	Kewaunee.....	590	3	36.6	.....	62	11	- 16	28	21	2.65	.....	1.60	4.5	4	14	4	12	w.	Eugene V. Kimball.	
Manitowoc.....	Manitowoc.....	616	61	38.2	+ 2.4	63	11	- 18	28	24	1.60	- 0.48	1.36	3.0	3	10	8	12	nw.	Miss Johanna Lups.	
Menasha.....	Winnebago.....	764	15	.....	.....	.....	.....	.....	.....	.....	0.81	- 0.36	0.64	0.1	3	19	3	8	sw.	Geo. T. Allanson.	
Menomonee Falls.....	Waukesha.....	842	3	37.4	.....	65	11	- 17	28	27	1.35	.....	0.56	0.6	5	15	10	5	sw.	Arthur H. Christman.	
Milwaukee.....	Milwaukee.....	681	42	40.0	+ 3.9	67	11	- 22	28	21	1.65	- 0.33	0.78	0.7	6	10	8	12	sw.	U. S. Weather Bureau.	
New London.....	Outagamie.....	762	16	36.2	+ 2.1	62	11	- 13	28	28	1.08	- 0.72	0.80	T.	2	9	7	14	nw.	August H. Pape.	
Oconto.....	Oconto.....	590	21	36.1	+ 1.8	61	11	- 14	28	28	1.12	- 0.95	0.97	3.0	2	10	16	4	sw.	Wm. K. Smith.	
Oshkosh.....	Winnebago.....	744	23	36.2	+ 1.5	63	11	- 10	28	31	0.94	- 0.71	0.47	1.0	3	16	12	2	sw.	Evan Vincent.	
Pine River.....	Waukesha.....	900	17	37.3	+ 3.2	66	11	- 11	28	31	1.10	- 0.52	0.68	1.5	4	7	16	7	sw.	Geo. H. Carpenter.	
Plum Island.....	Door.....	588	4	39.2	.....	56	11	- 20	28	30	3.65	.....	1.30	T.	6	7	5	18	nw.	Wm. Robinson.	
Plymouth.....	Sheboygan.....	843	2	37.0	.....	64	11	- 11	28	29	1.57	.....	0.87	4.2	6	16	5	9	sw.	Paul O. Feldrappe.	
Port Washington.....	Ozaukee.....	713	19	38.1	+ 2.0	65	11	- 18	28	27	1.63	- 0.33	1.10	1.5	4	9	4	17	se.	Richard C. Kann.	
Racine.....	Racine.....	633	15	40.5	+ 0.8	69	11	- 20	28	33	1.71	- 0.20	0.82	0.4	6	14	2	14	sw.	Daniel Davis.	
Ripon.....	Fond du Lac.....	1,031	2	37.2	.....	63	11	- 16	28	29	1.57	.....	1.03	0.5	3	12	8	10	nw.	Ripon College.	
Sheboygan.....	Sheboygan.....	831	13	38.1	+ 0.2	65	11	- 17	28	22	1.56	- 0.30	1.08	2.0	3	10	7	13	sw.	Louis C. Meyer.	
Sturgeon Bay.....	Door.....	600	13	36.3	+ 1.2	62	11	- 15	28	24	3.06	.....	1.32	7.0	5	8	12	10	s.	Adam N. Dier.	
Superior.....	Douglas.....	701	3	32.4	.....	56	10	- 7	28	29	0.15	.....	0.10	1.0	3	11	8	11	sw.	Edward B. Banks.	
Waupaca.....	Waupaca.....	857	17	35.3	+ 1.7	64	11	- 11	28	36	1.11	- 0.60	0.48	1.0	6	15	8	7	sw.	James H. Flagg.	
Illinois.																					
Chicago.....	Cook.....	823	42	42.8	+ 3.6	70	11	- 25	28	20	1.45	- 1.05	0.77	0.4	7	12	10	8	sw.	U. S. Weather Bureau.	
Evanston.....	do.....	601	.....	42.5	.....	71	11	- 21	28	29	2.06	+ 0.17	0.91	T.	5	17	3	10	.....	City of Evanston.	
Indiana.																					
Auburn.....	Dekalb.....	874	16	41.0	+ 2.3	73	11	- 17	28	37	2.86	+ 0.49	1.39	.....	4	10	5	12	sw.	Mrs. Josie B. Kuhlman.	
Berne.....	Adams.....	849	3	42.0	.....	72	12	- 18	29	29	1.27	.....	0.63	0.2	7	13	10	7	sw.	Henry M. Reusser.	
Elkhart.....	Elkhart.....	801	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. Miles Medical Co.	
Fort Wayne.....	Allen.....	856	16	41.8	+ 1.2	71	11	- 20	28	26	1.23	- 1.71	1.00	0.5	8	12	4	14	sw.	U. S. Weather Bureau.	
Hammond.....	Lake.....	598	21	41.2	+ 2.0	71	11	- 18	28	38	2.69	+ 0.38	1.10	0.5	7	8	10	12	.....	Carson W. Whitney.	
Howe.....	Lagrange.....	886	7	42.4	.....	75	21	- 12	28	37	2.84	.....	1.10	1.0	6	18	0	12	.....	James E. Zook.	
Notre Dame.....	St. Joseph.....	712	1	40.8	.....	69	11	- 23	28	24	2.74	.....	1.00	1.0	8	6	15	9	sw.	U. S. Weather Bureau.	
Whiting.....	Lake.....	606	3	42.0	.....	70	11	- 22	28	27	2.50	.....	1.49	1.5	5	15	6	9	sw.	D. H. Boyd.	
Michigan—Upper Peninsula.																					
Baraga.....	Baraga.....	623	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	D. S. S. & A. Ry.	
Bergland.....	Ontonagon.....	1,300	2	33.3	.....	62	10	- 0	28	36	0.87	.....	0.30	6.2	4	7	2	20	sw.	Frank McMonigal.	
Calumet.....	Houghton.....	1,246	24	32.6	+ 2.0	53	20	- 12	28	30	1.80	- 0.93	0.87	12.0	10	9	4	17	w.	E. S. Grierson.	
Chatham.....	Alger.....	875	11	32.6	+ 0.4	56	10	- 2	29	40	2.14	- 1.02	0.60	25.0	6	15	8	7	n.	U. P. Experiment Station.	
Deer Park.....	Luce.....	610	11	34.6	+ 0.9	58	10	- 10	28	28	0.85	- 1.51	0.40	7.0	3	7	1	22	nw.	Mrs. Sarah E. McGaw.	
Detour.....	Chippewa.....	585	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Winthrop S. Dedrick.	
Eagle Harbor.....	Keweenaw.....	622	13	36.3	+ 0.3	55	20	- 18	28	22	1.10	- 1.56	0.50	2.5	9	8	1	21	s.	John Nolen.	
Escanaba.....	Delta.....	612	39	34.7	+ 3.0	53	5	- 13	28	25	0.76	- 1.50	0.33	2.1	7	7	9	14	nw.	U. S. Weather Bureau.	
Ewen.....	Ontonagon.....	1,147	11	32.8	+ 3.3	61	10	- 1	28	40	1.24	- 1.15	0.31	11.0	7	7	1	22	nw.	W. B. Hatfield.	
Grand Marais.....	Alger.....	610	11	36.8	+ 1.4	66	3	- 19	28	38	3.07	+ 0.62	1.00	13.0	12	8	1	21	nw.	Mrs. Lena Truedell.	
Green.....	Ontonagon.....	622	1	35.2	.....	57	1	- 20	29	17	.....	.....	.....	.....	.....	16	6	8	nw.	T. A. Green.	
Houghton.....	Houghton.....	668	11	34.3	+ 2.7	55	10	- 13	28	35	1.64	- 1.16	0.82	13.2	9	3	11	16	nw.	U. S. Weather Bureau.	
Humboldt.....	Marquette.....	1,536	15	30.8	+ 3.5	59	10	- 4	28	46	.....	.....	.....	.....	.....	11	0	19	w.	D. S. S. & A. Ry.	
Iron Mountain.....	Dickinson.....	1,111	11	34.0	+ 1.6	62	10	- 6	28	34	1.22	- 0.47	0.68	7.0	4	5	15	10	sw.	Chapin Mining Co.	
Iron River.....	Iron.....	1,504	15	31.6	+ 3.0	60	10	- 3	30	44	0.65	- 1.66	0.25	2.0	3	15	10	5	nw.	Victor D. Laing.	
Ironwood.....	Gogebic.....	1,520	9	33.8	.....	62	10	- 15	25	31	2.35	.....	0.80	17.0	5	13	3	14	s.	J. V. Brennan.	
Ishpeming.....	Marquette.....	1,536	12	32.0	+ 1.7	56	10	- 4	29	34	1.42	- 1.11	0.40	13.5	8	6	11	13	w.	Cleveland Cliffs Iron Co.	
Isle Royale.....	Keweenaw.....	610	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Malone.	
Mackinac Island.....	Mackinac.....	831	11	34.5	- 0.3	54	20	- 19	14	24	2.36	- 0.36	1.57	7.5	6	1	10	19	w.	M. I. S. P. Commission.	
Maple Ridge.....	Delta.....	.....	6	32.3	.....	54	7	- 2	2												



TABLE 1.—Climatological data for November, 1912. District No. 4—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelting.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Michigan—Lower Peninsula.																				
Adrian.....	Lenawee.....	770	34	40.8	+ 1.9	70	11	14	28	28	2.11	- 1.16	1.20	0.5	4	11	9	10	sw.	H. E. Hubbard.
Allegan.....	Allegan.....	698	21	37.8	+ 0.2	65	11	18	15	27	2.49	- 0.27	0.70	8.0	9	8	8	14	w.	Pere Marquette R. R.
Alma.....	Gratiot.....	750	25	37.8	+ 0.2	65	11	18	15	27	3.95	+ 1.26	1.54	10.0	8	5	11	14	sw.	P. M. Smith.
Alpena.....	Alpena.....	609	39	35.2	+ 1.5	60	11	13	28	24	3.22	+ 0.66	1.17	12.7	13	2	11	17	sw.	U. S. Weather Bureau.
Ann Arbor.....	Washtenaw.....	930	32	39.8	+ 2.7	67	11	20	28	25	2.23	- 0.30	1.00	1.0	6	11	2	17	w.	University of Michigan.
Arbela.....	Tuscola.....	728	16	37.7	- 0.2	67	12	16	29	28	3.63	+ 0.87	1.26	7.5	7	0	22	8	nw.	Wm. Atkin.
Battle Creek.....	Calhoun.....	822	28	40.0	+ 1.7	68	11	18	28	25	3.56	+ 1.12	1.10	6.0	7	9	6	15	nw.	Elmer E. Sager.
Bay City.....	Bay.....	593	16	39.5 <sup>a</sup>	+ 2.5															Pere Marquette R. R.
Benzonia.....	Benzie.....	832	15	36.4	+ 1.0	60	11	18	16	22	2.41	- 0.78	0.68	17.2	10	7	10	13	sw.	Wallace Nutting.
Berlin.....	St. Clair.....	23	38.1	+ 1.7	65	11	18	28	28	2.84	+ 0.19	1.51	1.0	6					nw.	R. O. Gould.
Big Rapids.....	Mecosta.....	906	16	37.8	+ 2.8	63	11	11	28	31	2.48	- 0.26	1.20		5	6	9	15	w.	Supt. waterworks.
Blissfield.....	Lenawee.....	687	0	40.8		69	11	18	29	26	1.62		1.00	T.	4	18	3	9	sw.	Harry Watson.
Bloomington.....	Van Buren.....	8	40.4			70	12	22	30	26	4.01		1.06	7.0	9	13	6	11	se.	John M. Haven.
Cadillac.....	Wexford.....	1,293	3	35.2		59	11	8	28	22	2.92		1.36	6.5	11	10	8	12	sw.	Cadillac Water & Light Co.
Cassopolis.....	Cass.....	903	11	38.4	+ 1.6	62	10	15	28	28	1.45	- 1.09	1.02	2.0	4	9	5	16	nw.	Michigan Central R. R.
Charlevoix.....	Charlevoix.....	610	34	38.4	+ 1.6	62	10	15	28	28	1.45	- 1.09	1.02	2.0	4	9	5	16	nw.	Pere Marquette R. R.
Charlotte.....	Eaton.....	8	39.8			75	12	21	27	29	2.90		2.00	2.0	5	10	5	15	sw.	City of Charlotte.
Cheboygan.....	Cheboygan.....	611	22	34.8	0	60	11	15	16	30	1.98	- 0.69	1.50	10.0	4	6	16	8	sw.	E. A. Bouchard.
Clinton.....	Lenawee.....	830	22	41.5	+ 3.7	70	13	15	28	37	2.35	- 0.65	1.05	T.	4	11	6	13	sw.	David Woodward.
Coldwater.....	Branch.....	984	15	41.2	+ 2.9	69	11	14	28	27	3.58	+ 0.38	1.23	2.5	7	10	6	14	sw.	L. S. & M. S. R. R.
Concord.....	Jackson.....	7	39.0 <sup>a</sup>			65 <sup>a</sup>	11	11 <sup>a</sup>	28	30 <sup>a</sup>	1.98	- 0.23	0.80	2.0	4	11 <sup>a</sup>	14 <sup>a</sup>	4 <sup>a</sup>	sw.	W. N. Armstrong.
Croton.....	Newaygo.....	685	4	38.7		63	11	10	28	29	3.37		0.80	7.0	8	4	15	11	nw.	Grand Rapids Muskegon Power Co.
Detroit.....	Wayne.....	730	41	40.4	+ 1.4	65	11	22	28	21	1.80	- 0.83	1.08	0.1	9	7	8	15	w.	U. S. Weather Bureau.
Durand.....	Shiawassee.....	799	4	40.3 <sup>a</sup>		68 <sup>a</sup>	10	18 <sup>a</sup>	28	32 <sup>a</sup>					8				nw.	H. J. Tobin.
East Tawas.....	Iosco.....	590	15	37.0	+ 1.1	60	11	12	28	29	3.95	+ 1.99	1.20		8	8	10	12	sw.	Detroit & Mackinaw Ry.
Eloise.....	Wayne.....	640	15	40.8	+ 2.4	66	11	20	28	27	2.23	+ 0.33	0.97	0.1	9	6	11	13	sw.	John Gilmore.
Flint.....	Genesee.....	730	23	39.3	+ 3.4	68	11	19	28	29	3.22	+ 0.76	1.08	0.5	8	6	10	14	w.	William L. Fisher.
Frankfort.....	Benzie.....	589	8	39.5		58	10 <sup>a</sup>	21	28	18	3.20		1.20	13.0	7				s.	Geo. Morency.
Ganges.....	Allegan.....	665	3	41.0		64	11 <sup>a</sup>	27	14	23	4.18		1.25	2.5	10				sw.	H. H. Hutchins.
Gaylord.....	Otsego.....	1,367	12	33.0	+ 1.1	61	11	6	28	37	4.22	+ 0.61	1.24	14.0	11	11	0	19	sw.	Michigan Central R. R.
Gladwin.....	Gladwin.....	794	16	37.8 <sup>b</sup>	+ 2.6	65 <sup>b</sup>	11	16 <sup>b</sup>	28	33 <sup>b</sup>					18	4	8		sw.	Geo. R. Smith.
Grand Haven.....	Ottawa.....	628	31	40.4	+ 2.4	61	12	24	28	20	2.97	+ 0.44	1.31	2.0	14	7	8	15	w.	U. S. Weather Bureau.
Grand Rapids.....	Kent.....	707	23	40.5	+ 2.4	67	11	25	28	25	2.69	+ 0.16	1.14	7.1	10	7	9	14	s.	Do.
Grape.....	Monroe.....	625	22	40.8	+ 1.8	69	11	18	28	27	1.94	- 0.59	1.04	T.	6	9	9	12	w.	Joseph W. Morris.
Grass Lake.....	Jackson.....	989	6	39.6		66	12	22	16	30	3.05		1.60	2.0	4	12	3	15	sw.	Menzo Conklin.
Grayling.....	Crawford.....	1,147	22	34.5	+ 0.1	63	11	1	28	36	4.55	+ 1.76	1.95	15.8	9	9	5	16	w.	S. N. Insley.
Greenville.....	Montcalm.....	802	0	39.2 <sup>c</sup>		67 <sup>c</sup>	10	22 <sup>c</sup>	29	30 <sup>c</sup>				1.5	7	14	3	13	sw.	Michigan Pickle Co.
Harbor Beach.....	Huron.....	635	24	40.6	+ 3.4	65	6	17	28	36	3.75	+ 1.60	1.20		4	13	3	13	sw.	Pere Marquette R. R.
Harrison.....	Clare.....	1,159	19	37.2	+ 3.8	63	11	12	28	26	2.74	+ 0.39	1.36		7	14	6	11	sw.	Do.
Harrisville.....	Alcona.....	616	28	36.2	+ 1.3	63	11	11	28	26	6.22	+ 3.60	1.81	6.5	10	5	10	15	nw.	D. W. Mitchell.
Hart.....	Ocean.....	608	20	36.7	+ 1.3	56	6	26	19 <sup>a</sup>	24	2.50	+ 0.18	1.60		3	4	8	18	sw.	Pere Marquette R. R.
Hayes.....	Huron.....	620	22	37.9	- 0.5	60	12	21	16 <sup>a</sup>	28	3.57	+ 1.66	1.11	3.0	7	8	8	14	nw.	C. F. Leipprandt.
Highland.....	Oakland.....	1,006	20	39.4	+ 2.0	68	11	17	28	26	3.91	+ 0.25	1.44	1.5	8				sw.	A. D. De Garmo.
Hillsdale.....	Hillsdale.....	1,150	15	39.4		68	11	17	28	26	3.91	+ 0.96	2.20	3.4	8	12	4	14	sw.	C. L. Herron.
Holland.....	Ottawa.....	610	6	41.2		66	11	22	28	26	2.69		0.91	1.6	10	15	5	10	sw.	City of Holland.
Howell.....	Livingston.....	924	20	39.8 <sup>a</sup>	+ 3.2	62 <sup>a</sup>	11 <sup>a</sup>	16 <sup>a</sup>	15	26 <sup>a</sup>	3.06	+ 0.78	1.40	0.6	8	13	10	7	sw.	Frank Sharp.
Ivan.....	Kalamazoo.....	927	23	35.0	+ 1.5	63	11	9	15	28	2.49	- 0.21	0.60	14.3	13	7	11	12	sw.	O. L. Giddings.
Jackson.....	Jackson.....	927	15	40.4	+ 2.1	68	11	16	28	26	2.87	+ 0.55	1.58	1.5	7	16	6	8	w.	City of Jackson.
Jeddo.....	St. Clair.....	667	23	38.6	+ 1.9	63	11	19	28	27	2.81	+ 0.33	1.00	0.2	8	7	11	12	sw.	William Bioe.
Kalamazoo.....	Kalamazoo.....	955	36	39.5	+ 1.9	69	11	16	28	30	3.45	+ 0.64	1.50	9.0	5	9	9	12	w.	Kalamazoo Asylum.
Lansing (Agri. College).....	Ingham.....	820	48	38.6	+ 1.8	67	11	19	28	29	2.86	+ 0.45	1.17	6.2	11	9	5	16	sw.	U. S. Weather Bureau.
Lansing (capitol).....	do.....	881	25	39.6	+ 2.5	68	11	22	29	26	4.18	+ 1.62	1.25	7.6	11	10	3	17	sw.	State Board of Health.
Lapeer.....	Lapeer.....	827	13	39.2	+ 1.4	56	10	21	28	21	2.75	+ 0.71	1.29	6.8	10	5	7	18	s.	Michigan Home.
Ludington.....	Mason.....	586	14	39.2	+ 1.4	56	10	21	28	21	2.75	+ 0.71	1.29	6.8	10	5	7	18	s.	Pere Marquette R. R.
Luther.....	Lake.....	1,028	2	36.8		62	11	11	15	27	3.22		1.30	9.5	14	10	3	17	sw.	John W. Nicholson.
Mackinaw.....	Cheboygan.....	592	21	34.4	- 1.3	59	12	18	15	39									sw.	Grand Rapids & Indiana Ry.
Mancelona.....	Antrim.....	1,121	16	33.8 <sup>a</sup>	- 0.9	62 <sup>a</sup>	11	10 <sup>a</sup>	30	26 <sup>a</sup>	5.70	+ 2.84	2.00	32.0	10	13	5	12	w.	Do.
Manistee.....	Manistee.....	600	15	38.8	+ 2.1	63	12 <sup>a</sup>	16	28	38				4.0		5	17	8	sw.	Pere Marquette R. R.
Marshall.....	Calhoun.....	896	0	42.8 <sup>a</sup>		69 <sup>a</sup>	12	20 <sup>a</sup>	29	27 <sup>a</sup>									n.	E. B. Stuart.
Midland.....	Midland.....	604	13	38.7	+ 1.8	65	11 <sup>a</sup>	19	28	38	2.50	+ 1.00	1.00	5.0	6	10	2	18	n.	Pere Marquette R. R.
Morenci.....	Lenawee.....	811	5	41.0		70	11	17	28	30	2.12		1.39	0.8	5	15	1	14	w.	George J. Tripp.
Mount Clemens.....	Macomb.....	615	12	40.4	+ 1.5	67														



TABLE 1.—Climatological data for November, 1912. District No. 4—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of overcast days.			
Ohio.																					
Akron.....	Summit.....	1,081	25	41.7 <sup>b</sup>	+1.7	69 <sup>b</sup>	6	21 <sup>a</sup>	28	34 <sup>b</sup>	1.48	-0.89	1.11	1.3	6	13	1	16	s.	Prof. C. R. Olin.	
Antwerp.....	Paulding.....	733	.....	41.7	.....	72	11	17	28	32	0.91	.....	0.81	T.	.....	2	19	0	11	nw.	North G. Osborn.
Benton Ridge.....	Hancock.....	800	19	41.4	+1.0	70	11	17	28	28	1.16	-1.38	0.65	0.2	6	10	7	13	sw.	J. W. Powell.	
Bowling Green.....	Wood.....	670	31	41.6	-2.3	70	11	15	28	29	0.98	-1.98	0.45	0.2	4	13	6	11	sw.	G. C. Housekeeper.	
Bucyrus.....	Crawford.....	1,000	18	40.8	-1.7	70	11	15	28	38	1.25	-1.06	0.35	2.0	6	15	5	10	sw.	Jas. R. Hopley.	
Cleveland (1).....	Cuyahoga.....	762	41	43.6	+3.2	68	6	26	28	42	0.89	-1.86	0.42	1.3	12	8	7	15	s.	U. S. Weather Bureau.	
Cleveland (2).....	do.....	754	15	43.2	+2.7	69	6	25	28	23	1.30	-0.81	0.47	2.0	10	11	6	13	sw.	Rev. F. L. Odenbach, S. J.	
Conneaut.....	Ashtabula.....	675	2	43.4	.....	69	6	21	29	25	3.08	.....	0.75	10.0	12	9	2	19	sw.	E. L. Ransom.	
Findlay.....	Hancock.....	776	23	41.9	+1.8	72	11	18	28	31	0.86	-1.91	0.55	T.	4	16	11	3	sw.	Dr. E. A. Moser.	
Fremont.....	Sandusky.....	628	10	42.8	+1.8	71	11	19	28	27	1.28	-0.87	0.67	T.	4	15	5	10	sw.	E. Stanley Thomas.	
Hedges.....	Paulding.....	725	18	39.6	+0.2	71	11	16	28	42	0.86	-1.65	0.75	T.	2	9	9	12	w.	Charles Stutzman.	
Hillhouse.....	Lake.....	997	19	42.2	+3.0	69	6	19	29	27	2.14	-1.22	0.73	1.0	8	9	9	12	sw.	J. W. Doncaster.	
Hiram.....	Portage.....	1,260	32	41.0	+2.2	68	6	19	28	22	2.13	-0.98	1.05	7.0	7	10	10	10	sw.	Prof. G. H. Colton.	
Hudson.....	Summit.....	1,123	51	42.7	+1.1	71	7	18	29	27	1.92	-1.13	1.10	2.0	8	13	6	11	sw.	Dr. W. I. Chamberlain.	
Lima.....	Allen.....	875	13	41.6	+0.2	69	11	20	28	26	0.70	-1.35	0.45	0	2	12	11	7	sw.	Miss Ollie DeLong.	
Medina.....	Medina.....	944	24	41.2	+0.4	70	6	19	28	28	0.94	-1.87	0.49	1.0	3	11	8	11	s.	F. W. Clark.	
Montpelier.....	Williams.....	880	20	41.5	+3.7	71	11	15	28	28	2.11	-0.82	0.95	1.0	5	14	0	16	w.	C. L. Lacer.	
Napoleon.....	Henry.....	680	25	41.4	+1.3	71	11	18	27	34	1.34	-1.32	0.95	0	4	16	2	12	nw.	A. C. Senter.	
New Bremen.....	Auglaize.....	1,038	19	41.2	+0.1	71	11	17	28	29	0.36	-2.57	0.22	T.	3	18	9	3	sw.	Miss Lillian Grothaus.	
North Royalton.....	Cuyahoga.....	1,000	19	41.1	+1.3	76	7	18	28	34	1.19	-1.43	0.45	2.0	5	13	10	7	sw.	W. S. Edgerton.	
Norwalk.....	Huron.....	719	26	42.6	+2.1	71	11	19	28	27	1.26	-1.26	0.72	T.	6	8	9	13	w.	Giles R. Gregory.	
Oberlin.....	Lorain.....	855	37	42.2	+2.3	70	6	19	28	30	0.89	-1.64	0.27	T.	5	11	3	16	sw.	Prof. F. F. Jewett.	
Ottawa.....	Putman.....	720	19	42.0	+1.0	72	11	18	28	31	0.59	-2.08	0.52	T.	4	10	10	10	sw.	Prof. J. T. Maidlow.	
Sandusky.....	Erie.....	629	35	43.0	+2.2	70	11	23	28	25	0.79	-1.95	0.68	0.5	7	5	9	16	sw.	U. S. Weather Bureau.	
Tiffin.....	Seneca.....	775	30	41.6	+1.2	67	11	21	26	24	0.95	-1.78	0.52	T.	4	16	8	6	s.	Prof. T. H. Sonnedecker.	
Toledo.....	Lucas.....	769	41	42.0	+2.3	70	11	23	28	23	1.77	-0.88	0.93	0.1	10	12	7	11	sw.	U. S. Weather Bureau.	
Upper Sandusky.....	Wyandot.....	857	29	41.8	+0.8	70	11	18	28	27	1.40	-1.27	0.60	T.	5	9	8	13	sw.	Robert E. Tracht.	
Vicksburg.....	Sandusky.....	588	19	41.8	+1.8	70	11	15	28	28	1.12	-1.15	0.61	0.4	9	10	9	11	sw.	John W. Barr.	
Wapakoneta.....	Auglaize.....	898	.....	40.3	.....	68	11	18	28	24	0.79	.....	0.37	T.	5	14	5	11	s.	Dr. William Kayser.	
Wauseon.....	Fulton.....	780	40	40.4	+3.3	70	11	18	28	29	1.61	-1.49	0.75	0.3	10	5	15	10	sw.	Thomas. Mikesell.	
Wickliffe.....	Lake.....	740	.....	40.4	.....	70	11	18	28	29	1.27	.....	0.66	1.0	8	7	4	19	w.	C. M. Richardson.	
Pennsylvania.																					
Erie.....	Erie.....	658	39	43.7	+2.6	69	6	27	28	25	2.17	-1.44	0.83	15.3	12	4	4	22	sw.	U. S. Weather Bureau.	
New York.																					
Adams Center.....	Jefferson.....	540	21	39.9	+5.2	66	6 <sup>†</sup>	6	29	28	6.09	+2.61	1.61	24.0	17	8	8	14	sw.	A. E. Cooley.	
Angelica.....	Allegany.....	1,340	29	38.5	+2.5	65	6	13	28	33	2.32	-0.06	0.78	7.5	14	3	8	19	w.	Charles P. Arnold.	
Appleton.....	Niagara.....	270	21	42.0	+2.5	66	6	22	28	25	2.88	-0.50	0.80	1.8	12	6	11	13	sw.	H. A. Van Wagoner.	
Auburn.....	Cayuga.....	715	43	41.6	+3.2	69	6	22	28	26	4.27	+1.24	1.55	7.0	9	16	4	10	n.	A. H. Underwood.	
Avon.....	Livingston.....	585	17	.....	.....	.....	.....	19	28	.....	0.76	-1.29	0.41	2.0	5	2	13	15	n.	W. G. Markham.	
Blue Mountain Lake.....	Hamilton.....	1,750	12	.....	.....	.....	.....	19	28	.....	2.91	+0.16	0.75	4.5	14	2	12	16	sw.	Miss E. F. Merwin.	
Brockport.....	Monroe.....	537	16	41.4	+2.9	69	6	19	28	25	2.91	+0.16	0.75	4.5	14	2	12	16	sw.	W. H. Lennon.	
Buffalo.....	Erie.....	767	61	42.5	+3.2	65	6	25	28	23	2.68	-0.67	0.81	4.4	10	5	8	17	sw.	U. S. Weather Bureau.	
Canton.....	St. Lawrence.....	448	18	35.9	+2.0	64	6	0	28	31	6.50	+3.09	1.87	26.1	15	5	7	18	sw.	Do.	
Cape Vincent.....	Jefferson.....	246	7	40.6	.....	60	6	19	29	33	4.18	.....	1.35	.....	10	6	8	16	n.	J. Harry Grapotte.	
Chazy.....	Clinton.....	151	12	39.0	+5.1	65	2 <sup>†</sup>	10	29	37	2.73	+1.21	1.10	5.0	7	6	14	10	n.	W. R. North.	
Chestnut Lawn.....	Wyoming.....	1,090	0	40.6	.....	69	6	9	28	29	1.91	.....	0.50	8.5	11	11	6	13	w.	Charles Peterson.	
Dannemora.....	Clinton.....	1,490	7	36.0	.....	62	6	15	29	30	3.71	.....	0.86	9.5	11	8	5	17	w.	Dr. W. N. Thayer.	
Elba.....	Genesee.....	500	13	39.2	+1.2	67	6	13	29	25	1.49	-0.58	0.85	3.0	4	17	4	9	sw.	Joseph S. Wilford.	
Fayetteville.....	Onondaga.....	530	11	42.1	+4.2	68	6 <sup>†</sup>	22	28	36	4.08	+1.47	1.06	11.0	15	10	4	16	sw.	Dana H. Wells.	
Gabriels.....	Franklin.....	1,729	10	33.4	.....	62	6	2	29	36	3.73	.....	1.46	10.9	16	7	5	18	sw.	Gabriels Sanitarium.	
Harkness.....	Clinton.....	622	10	37.6	+2.8	65	6	9	29	26	3.76	+2.26	1.38	10.0	11	23	1	6	w.	J. W. Harkness.	
Hemlock Lake.....	Livingston.....	900	14	.....	.....	65	6 <sup>†</sup>	22	28	23	1.76	+0.07	0.63	6.0	9	8	8	14	sw.	Bernard P. McGrady.	
Hunt.....	do.....	1,321	13	42.4	+3.8	72	6	8	28	28	1.33	-0.52	0.60	2.0	6	8	7	15	sw.	W. S. Barager.	
Ithaca.....	Tompkins.....	928	34	41.8	+4.2	69	6	21	28	27	4.41	-0.17	0.80	9.1	12	6	7	17	se.	U. S. Weather Bureau.	
Keene Valley.....	Essex.....	1,000	14	36.1	+2.2	68	6 <sup>†</sup>	2	29	43	4.14	+1.52	0.78	9.0	10	8	8	14	sw.	E. R. Wells.	
King Ferry.....	Cayuga.....	12	.....	.....	.....	.....	.....	2	29	43	4.14	+1.52	0.78	9.0	10	8	8	14	sw.	Lucius A. Goodyear.	
Lake George.....	Warren.....	350	15	40.4	+3.4	65	12	17	29	30	4.08	+1.01	2.12	1.6	8	6	16	8	s.	Charles Forsell.	
Lake Placid Club.....	Essex.....	1,864	4	30.2	.....	55	6	1	29	32	4.83	.....	1.10	18.9	20	5	12	13	nw.	Henry van Hovenberg.	
Lauterbrunnen.....	Wyoming.....	.....	0	40.4	.....	69	6	15	29	28	1.80	.....	0.49	5.2	11	6	12	12	sw.	James O. Howard.	
Lockport.....	Niagara.....	520	25	41.0	+2.2	64	6	17	28	21	2.28	-0.09	0.75	4.0	7	11	10	9	sw.	Robert N. Clark.	
Lowville.....	Lewis.....	900	45	39.7	+5.2	66	6	4	29	41	4.84	+1.40	1.10	20.0	16	8	17	5	w.	Prof. W. F. H. Breeze.	
Mora.....	Franklin.....	200	12	36.4	+1.8	65	6	0	29	32	6.25	+3.77	1.50	31.5	11	8	12	10	w.	C. E. McBride.	
Nehasane.....	Hamilton.....	1,750	4	33.0	.....	61	6	4	29	34	5.22	.....	0.91	28.9	19	6	10	14	nw.	L. W. Brown.	
North Lake.....	Herkimer.....	1,822	11	33.7	.....	60	6	6	29	36	3.47	.....	0.85</								



TABLE 2.—Daily precipitation for November, 1912. District 4, Lake Region.

Stations.	Watershed.	Day of month.																														Total.		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
Minnesota.																																		
Cloquet.....	Lake Superior	T.	T.			.01		.02	.02			.01	T.	T.			T.							T.		.55	.10	.05					0.71	
Duluth.....	do.												T.	T.										T.		.16						T.	0.21	
Floodwood.....	do.																									.63							0.63	
Stephens Mine.....	do.	T.				.10			.23																	.05	.11						0.49	
Two Harbors.....	do.																							T.		.06	T.						0.06	
Virginia.....	do.					T.			.25				T.										T.			.12		.03					0.40	
Wisconsin.																																		
Appleton.....	Fox								.01				.76	.20	.63										.08	.16	T.	T.	T.				1.24	
Ashland.....	Lake Superior					.07		.10					T.	.04												.05	.45						.71	
Bayfield.....	do.												T.	.35																			.20	
Cecil.....	Fox	T.						T.	T.				.88	.35											.22	T.	.04	.09					1.58	
Cornucopia.....	Lake Superior																																	
Crandon.....	Fox																																	
Florence.....	Menomonee	T.							.26		.04		T.		.20											.20	.10						.80	
Fond du Lac.....	Fox												.55	.33	.13										.04	.88				T.	.02		1.95	
Grand River Locks.....	do.												.73	.16	.06										.06	T.	T.						1.01	
Green Bay.....	Lake Michigan							.02					.68	.22	T.										.19	.04	T.			T.			1.15	
High Falls.....	do.							*		.03			.10	.90											.30	T.							1.33	
Iron River.....	Lake Superior							.20					T.					T.															1.20	
Kewaunee.....	Lake Michigan							.60					1.60	.35											.10		.20	.30	.20				2.65	
Manitowoc.....	do.							.05					1.36												.19	T.		T.					1.60	
Menasha.....	Fox												.08	.64											.09	T.				T.			.81	
Menomonee Falls.....	Lake Michigan	T.				T.	.56						.27	.44	.04										T.	.04		T.			T.		1.35	
Milwaukee.....	do.					.21	.41						.55	.40	.04										.04	T.		T.	T.		T.		1.65	
New London.....	Fox												.80		.28																		1.08	
Oconto.....	Lake Michigan												.97	T.										T.	.15	T.							1.12	
Oshkosh.....	Fox												.47	.37	T.											T.	.10						0.94	
Pine River.....	do.												.68	.27	T.											.07	.08	T.		T.	T.		1.10	
Plum Island.....	Lake Michigan												.38	1.10	.19											1.30	.28			T.	T.		3.65	
Plymouth.....	do.												.87	.40	.08											*		T.					1.57	
Port Washington.....	do.					.28							.20	.47	.12											.05							1.63	
Racine.....	do.	.10				.82							.16	.28	.26											.04							1.71	
Ripon.....	Fox												1.03	.28	.30																		1.57	
Sheboygan.....	Lake Michigan	T.											.28	1.08	.30											T.				T.	T.		1.56	
Sturgeon Bay.....	do.	T.											.44	1.32	.39											.72	.19			T.	T.		3.06	
Superior   .....	Lake Superior					.03		.02					T.																				0.15	
Waupaca.....	Fox							.02					.43	.48	.02											.13	.03						1.11	
Illinois.																																		
Chicago.....	Lake Michigan	.21				.20	.57	T.					.20	.19	.01										T.	.07			T.	T.			1.45	
Evansston.....	do.	.48				.91							T.	.54	.08											.05							2.06	
Highland Park.....	do.					1.13							T.	.74	.04												.10						2.01	
Indiana.																																		
Auburn   .....	Maumee	1.28						1.39						.10	.09												T.	T.					2.86	
Berne.....	do.	.54				T.	.63	T.					.02	.02	.02											.01	.03						1.27	
Elkhart.....	St. Joseph																																	
Fort Wayne.....	Maumee	.08				T.	.18	.85	T.				.01	.02	.02											.02	.05	T.					1.23	
Hammond.....	Lake Michigan					T.	.85	1.10	.28					.10	.06											T.	.20	.10					2.69	
Howe   .....	St. Joseph	.90						1.10	.18					.33	.08												.25						2.84	
Notre Dame.....	do.	.47				T.	.47	.80					.17	.09	.58											.08				T.	T.		2.74	
Whiting.....	Lake Michigan	.77				.08	1.41							.17													.07				T.		2.50	
Michigan—Upper Peninsula.																																		
Baraga.....	Lake Superior																																	
Bergand.....	Ontonagon								.25					T.												T.	.30		.22	.10	T.		0.87	
Calumet.....	Lake Superior	.24	T.			T.			.87				T.												.13	.04	.04		.32	.02	.06	.04	1.80	
Chatham.....	do.	.04												.30												.60	.60	.40					2.14	
Deer Park.....	do.	T.										T.														.15				.40	.30		0.85	
Detour.....	St. Marys																																	
Eagle Harbor.....	Lake Superior	.25	T.					.50	.05			.02	.03													T.	.05	.09	.03	T.		.08	T.	1.10
Escanaba.....	Lake Michigan	T.				T.		.20	.01			T.	.26	.08												.13	T.	.02	.06	T.			0.76	
Ewen.....	Ontonagon	.31						.25	T.																	.18	.10	.11	.19	.10			1.24	
Grand Marais.....	Lake Superior	1.00	.05			T.	.20	.20						T.	T.			.05	.20							.02	.20	.60	.20	.30		T.	.05	3.07
Green.....	do.																																	
Houghton.....	do.	.13	T.			T.		.82				T.	T.	T.	T.			.02							T.	.03	.04	T.	.09	.38	.06	.07	T.	1.64
Humboldt.....	Escanaba	.20				T.							T.		T.												.04		.01					
Iron Mountain.....	Menominee	T.	T.							.21				.68													.18	.15					1.22	
Iron River.....	do.							.25						.15													T.	T.	.25				0.65	
Ironwood.....	Lake Superior	.18						.38																		.25		T.	.74	.80			2.35	
Ishpeming.....	Escanaba	.40	T.			T.		.10					.02	.05												.30	.20		.30	.05			1.42	
Isle Royale.....	Lake Superior																																	
Mackinac Island.....	Lake Huron	.02	T.	T.									.07	.55	.10	T.	T.									1.57	T.	T.		T.			2.36	
Maple Ridge.....	Lake Michigan	.30						.26																		1.08	.60		.40					2.94
Marquette.....	Lake Superior	.19	T.			.02	T.	.07				T.	T.	.07			.02									.32	.02	.02	.48	.04	T.		1.25	
Menominee.....	Menominee						.05						.82	.10												.45		.10					1.63	
Munising.....	Lake Superior	.17	.65			T.		.25	.07					.13				.05	.08							.66	.65		.27	.12			3.10	
Newberry.....	Tequamenon	.06	.10			T.		.31	.26					.25	.05										.01	.55	.15		.12	.17		.05	2.08	
Powers.....	Lake Michigan																																	



Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
<b>Michigan—Lower Peninsula—Con.</b>																																	
Ann Arbor.	Huron.	1.00	T.			.03	.93	.10			.03		T.	.04	T.												T.	.10				2.23	
Arbela.	Saginaw.	.56					1.26	.13						.77	.26										.51		T.	.14				3.63	
Battle Creek.	Kalamazoo.	.79	T.		T.	T.	1.10		T.				T.	.76	T.									.08	.05		T.	.28	.50			3.56	
Bay City.	Saginaw.																							.32	.28		.30	.20	.14			2.41	
Benonia.	Beitsey.	.01	T.						.04	T.			12	.68	.32									T.	T.	T.		T.				2.84	
Berlin.	Clinton.	1.51			T.		.50	.25	T.				15	.35	.08		T.							T.	T.	T.		T.				2.48	
Big Rapids.	Muskegon.	.60					.47						10	1.20														.11				1.62	
Blissfield.	Raisin.	.53					1.00		.02				T.	.07														T.				4.01	
Bloomingdale.	Lake Michigan.	.40	T.			T.	1.06	.36	T.				T.	.97	T.									.07	.25	.10		T.	.70	.10		2.92	
Cadillac.	Manistee.	.26					.42		.12	.02			15	1.36	.15	.14									.14		.10	.06					
Cassopolis.	St. Joseph.												42	.60										.33			.10					1.45	
Charlevoix.	Lake Michigan.													.55											.10					.10		2.90	
Charlotte.	Kalamazoo.					2.00	.15							.58										T.	.50							1.98	
Cheboygan.	Cheboygan.	T.	T.										1.50	.25										T.	.18	T.		.05				2.35	
Clinton.	Raisin.	1.02					1.05	.23																	.05					T.		1.98	
Coldwater.	St. Joseph.	1.10			T.		1.23		.05					.47	.15									T.	.50							3.58	
Concord.	Kalamazoo.	T.	T.			T.	.40		T.					.58										.80					.08			1.98	
Croton.	Muskegon.	.02				T.	.80	T.	.05					1.46											.26				.40	.30	.08	3.37	
Detroit.	Detroit.	.46	T.			.07	1.05	.03	.03				T.	.13	.01		T.							.01	T.			T.	.01				



TABLE 2.—Daily precipitation for November, 1912. District No. 4—Continued.

Stations.	Watershed.	Day of month.																														Total.			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
Ohio—Continued.																																			
Hedges.....	Maumee.....	T.	T.			.11	.75																			T.						0.86			
Hillhouse.....	Lake Erie.....	.41	T.				T.	.73	.05	.10				T.	.15	.08										T.	.12	T.	T.	.50		2.14			
Hiram.....	do.....	.20	.02				T.	1.05	T.	.25				T.	.08	.12											.41					2.13			
Hudson.....	do.....	.23						1.10	.02					.02	.05		.30										.12					1.92			
Lima.....	Maumee.....		T.				.45						T.	.25			.30										.41					0.70			
Medina.....	Lake Erie.....	.35	T.				.49			T.				T.	T.											T.	.10					0.94			
Montpelier.....	Maumee.....	.66	T.			.35	.95						.05	T.											T.	T.	T.		.10			2.11			
Napoleon.....	do.....				.23	.95							.14	.02												T.	T.			.10		1.34			
New Bremen.....	do.....	.05	T.			.22							T.	.09	T.										T.					T.		0.36			
North Royalton.....	Lake Erie.....	.24				.20	.45								.10													.20				1.19			
Norwalk.....	do.....	.24				.72	.14	.01						.12	.08																	1.26			
Oberlin.....	do.....	.21	.04			.27	.25							T.	.12	T.										T.						0.89			
Ottawa.....	Maumee.....	.03	T.			T.	.52	.02					T.	.02												T.						0.59			
Sandusky.....	Lake Erie.....	.04	T.			T.	.67	.01	T.					.01	.03											T.	.01		.02	T.		0.79			
Tiffin.....	Sandusky.....	.30	T.			T.	.52	.12	.01				T.	T.	T.											T.	T.	T.	T.			0.95			
Toledo.....	Maumee.....	.50	T.			.08	.89	.04	.01					.11	.10	.02									.01	T.	T.	T.	T.	.01		1.77			
Upper Sandusky.....	Sandusky.....	.40	T.			T.	.20	.60		T.			T.	.10	.10	T.										T.						1.40			
Vickery.....	Lake Erie.....	.31				.01	.61	.01					T.	.02	.11												.01	.01	.03			1.12			
Wapakoneta.....	Maumee.....	.24	T.			T.	.37	.02					T.	.11	.05											T.	T.	T.		.01		0.79			
Wauseon.....	do.....	.47	T.			.12	.75	.07	.02				.04	.09	.02										.02	T.	T.			.01		1.61			
Wickliffe [ ].....	Lake Erie.....	.22					.66		.02	.04				T.	.13	.02										T.	T.	.18		.03		1.27			
Pennsylvania.																																			
Erie.....	Lake Erie.....	.09	.17		T.	T.	.24	.45	T.	.03	T.		T.	.02	.01		.01	T.								T.	.21	.01	.10	.83	T.		2.17		
New York.																																			
Adams Center.....	Lake Ontario.....	T.	T.	.05			T.	1.61	.40	.30			.12	.41	.31	.20	.04	.10	.10								.32	.50	.15	.70	.60	.18	6.09		
Angelica.....	Genesee.....	.16	.13	.03				.78	.04	.23	.07			.05	.07	.09		.09	.04								.32	.22	T.	T.			2.32		
Appleton.....	Lake Ontario.....	.14	T.	T.			.05	.54	.18	T.			T.	.70	.03	.15	T.	.02	.05								.80	.11	.11	T.			2.88		
Attica.....	do.....																																		
Auburn.....	Oswego.....		T.					1.55		T.	T.		.18	.44	.15	.08	.12	.13	T.							1.20	.42			T.			4.27		
Avon.....	Genesee.....	T.												.41	.08	.03										.03	.21					0.76			
Blue Mountain Lake.....	Raquette.....																																		
Brockport.....	Lake Ontario.....	.06	T.	.06			T.		.75	.01	.20			.02	.58	.10	.03										.42	.58		.05	.01		2.91		
Buffalo.....	Lake Erie.....	.17	T.	T.	T.	.02	.01	.81	.12	T.				.02	.37	.58			T.	T.							.23	T.	.35				2.68		
Canton.....	Grass.....	.29	T.				.04	1.51	.15	.08				.68	.24	.13	T.	T.									1.04	.33	.27	1.60		.14	6.50		
Cape Vincent [ ].....	St. Lawrence.....				.33			.95	.12					.45	.50	.30	.01	.02															4.18		
Chazy.....	L. Champlain.....		.22				.45		1.10	.14				.32	.20												1.35	.15					2.73		
Chestnut Lawn.....	Genesee.....	.16	T.	T.				.50	.03	.26				.16	.06	.03		T.										.25	.07		.35	.04	1.91		
Dannemora.....	L. Champlain.....	.20	T.					.68	.86	T.				.11	.35	.43	.13	.05	T.	.05								.65				.20	3.71		
Elba.....	Lake Ontario.....	.06					T.	.85	T.	T.				.28	T.	T.		T.	T.									.30				T.	1.49		
Fayetteville.....	Oswego.....	.11		.04				.34	.82	.17				.03	.02	.86	.04	.08	.06	.04							1.06	.37	T.	.04			4.08		
Forest Ranger School.....	Oswegatchie.....																																		
Gabriels.....	St. Regis.....	.24	T.	T.		T.	.15	1.46	.03	.17				.07	.42	.30	.08	.01	.12									.07	.07	T.	.20	.08	.10	3.73	
Harkness.....	L. Champlain.....	.04					.01	.37	1.38	.12				.01	.32	.27	.12	.04	T.														3.76		
Hemlock Lake.....	Genesee.....	T.		T.				.63	.31	.04					.13	.05	.05	T.	T.														1.76		
Hunt.....	do.....	.13						.60	.25						.15																		1.33		
Ithaca.....	Oswego.....	.06	T.	T.			T.	.80	.05	.03					.05	.25	.06	.02	.01	.06													2.41		
Keene Valley.....	Ausable.....	.63	T.				T.	.64	.48					.05	.42	.34	.10		.06									.78	.64	T.	T.	T.	4.14		
King Ferry.....	Oswego.....	T.						.85	.09						.11	.37	.12	T.		.07								.89	.29				2.79		
Lake George.....	L. Champlain.....	.52						2.12	.16						.43	.46	.16	T.															4.08		
Lake Placid Club.....	Ausable, W. Br.....	.18	.15	.05			.06	.74	.36	.40	.15			.05	.28	.92	.38	.05	.12	.02													4.83		
Lauterbrunnen.....	Genesee.....	.15	T.	.01				.49	.02	.30					.11	.07	.05		T.	T.								T.	.21		.35	.04	1.80		
Lockport.....	Lake Ontario.....	.19	T.	T.				.57		.14					.75			.05										T.	.45	.13			2.28		
Lowville.....	Black.....	.42	.01				.05	.76	.56	.04				.01	.35	.27	.04	.02	.30								1.10	.68			.22		.01	4.84	
Moirs.....	St. Lawrence.....	T.	T.					1.50	.50	.05					.68	.20	.80	.02										.90	.70		.80			6.25	
Nehasane.....	Black.....	.54	.02	T.		T.	.04	.91	.53	.17	.01			.02	.40	.50	.10	T.	.20	.10								.23	.55	.05	.20	.50	.15	5.22	
North Lake.....	do.....	.85						.30	.20						.18	.60	.14		.22									.58	.32				.08	3.47	
Ogdensburg.....	St. Lawrence.....	.37	T.				T.	1.28	.50	.17				.78	.43	T.		.06											.25	.25	T.	.30		T.	4.69
Old Forge.....	Black.....	.62						1.25	.41	.10				.01	.10	.52	.65		.25	.12									.35	.67		.02	.25	5.32	
Oswego.....	Lake Ontario.....	.02	T.	.02	T.		T.	.87	.14	.45				.02	.39	.23	.05	.02	.07	T.								.90	.14	T.		.11		3.43	
Otto.....	Lake Erie.....																																		
Palermo.....	Lake Ontario.....		.06	.10				.45	.55	.62				.42			.05	.03	.01	T.								.90	.41	.10	.16			3.86	
Perry City.....	Oswego.....	.02	T.					.76	.33	.24				.17		.18	.03	.03	.05																



TABLE 3.—Maximum and minimum temperatures at selected stations for November, 1912. District No. 4, Lake Region.

Date.	Duluth, Minn.		Wisconsin.						Chicago, Ill.		Fort Wayne, Ind.		Upper Michigan.										Lower Michigan.					
			Florence.		Green Bay.		Milwaukee.						Escanaba.		Ewen.		Houghton.		Marquette.		Sault Ste. Marie.		Alpena.		Battle Creek.		Cadillac.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1....	29	19	37	23	35	27	37	29	43	29	40	33	36	25	38	23	31	24	36	26	36	26	37	28	40	31	35	28
2....	32	16	32	24	36	21	37	24	38	28	38	28	35	22	38	22	32	24	35	26	31	24	35	21	35	30	31	24
3....	46	24	50	17	49	26	49	28	48	30	45	25	47	22	52	12	54	19	50	24	40	24	42	31	45	28	43	25
4....	53	27	49	34	51	40	53	37	57	40	54	36	46	36	53	34	53	40	51	39	48	38	47	36	51	35	48	35
5....	44	27	51	30	54	37	57	42	58	45	60	42	53	33	50	36	45	35	56	35	54	32	58	38	59	45	54	38
6....	41	30	41	22	45	35	51	38	56	45	58	49	44	31	48	25	41	34	41	30	45	34	51	41	54	46	51	40
7....	47	34	46	20	50	29	47	36	48	41	52	40	45	27	52	22	48	29	50	30	48	30	45	31	51	35	47	30
8....	41	30	43	33	45	39	51	40	54	41	55	38	45	36	48	26	42	32	44	34	40	32	44	30	53	33	42	34
9....	36	26	40	30	42	31	45	34	49	36	48	39	42	36	40	29	39	38	41	36	40	31	42	32	46	37	40	32
10....	58	34	58	31	56	40	61	42	65	47	65	44	49	42	61	29	55	33	63	36	48	30	51	32	60	39	53	35
11....	41	34	54	32	62	46	67	49	70	55	71	51	52	40	58	32	43	35	51	39	49	35	60	36	68	45	59	43
12....	36	30	45	32	46	38	60	41	62	49	63	54	42	33	55	30	38	34	40	36	43	32	51	37	63	52	55	39
13....	34	20	34	30	39	32	41	32	49	36	61	37	35	31	50	28	34	32	37	32	34	30	38	32	60	37	42	29
14....	37	15	32	24	37	28	37	30	41	34	39	33	32	26	48	29	32	24	33	28	33	19	32	25	38	31	32	23
15....	37	22	34	15	39	23	41	26	43	31	42	30	37	21	40	11	38	22	38	27	30	17	28	16	40	26	33	16
16....	40	23	35	22	40	31	43	32	45	35	50	27	38	28	43	26	39	31	38	33	38	21	36	15	44	25	36	23
17....	46	21	35	24	42	28	46	29	46	32	44	30	37	32	44	24	39	28	39	30	34	30	35	29	43	31	36	30
18....	52	27	36	11	48	26	53	35	54	35	53	31	43	26	49	16	49	26	46	29	36	30	38	30	49	25	41	24
19....	55	31	48	20	55	36	58	40	60	40	59	36	50	32	50	28	47	39	53	38	45	32	49	33	55	35	49	34
20....	52	37	47	30	54	37	57	42	63	43	64	38	49	35	61	29	51	33	58	37	47	29	49	30	61	36	52	30
21....	42	32	44	30	48	36	51	37	54	40	58	36	48	33	43	29	40	38	46	38	42	35	48	34	55	40	50	36
22....	40	31	43	32	46	35	52	37	53	35	52	29	47	33	35	27	41	32	45	33	40	33	46	32	50	31	42	33
23....	32	23	41	30	42	32	42	28	45	31	46	32	38	32	32	24	36	32	38	33	36	30	42	32	45	32	40	32
24....	30	20	32	25	35	28	35	28	37	28	33	26	34	28	31	20	32	27	35	28	30	24	39	29	35	28	41	26
25....	26	18	27	14	31	21	34	27	38	29	33	31	30	22	30	6	30	24	32	24	32	23	32	26	34	30	31	25
26....	29	21	30	22	34	22	33	30	38	31	39	31	32	23	28	24	29	23	31	24	32	25	32	27	33	30	30	24
27....	21	6	24	12	29	21	31	26	34	27	33	24	26	16	25	12	23	18	24	16	24	14	31	17	31	26	29	22
28....	33	8	23	6	32	19	36	22	39	25	35	20	33	13	28	—1	31	13	26	14	30	10	30	13	30	18	28	8
29....	35	23	36	15	43	30	45	33	47	34	43	30	38	24	28	14	36	30	37	20	36	24	39	27	37	29	38	24
30....	39	23	34	18	43	26	46	31	49	34	50	27	40	21	29	14	38	23	37	25	35	27	40	26	46	21	41	24
Mns..	39.5	24.4	39.4	23.6	43.6	30.7	46.5	33.5	49.4	36.2	49.4	34.2	40.8	28.6	42.9	22.7	39.7	28.9	41.7	30.0	38.5	27.4	41.6	28.9	47.0	32.9	41.6	28.9

Date.	Lower Michigan.						Ohio.						Erie, Pa.		New York.						Vermont.							
	Detroit.		Muskegon.		Saginaw, West Side.		Cleveland.		Lima.		Sandusky.				Toledo.		Buffalo.		Canton.		Rochester.		Syracuse.		Burlington.		Northfield.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1....	41	29	39	30	38	29	61	38	61	35	60	35	43	30	62	37	60	37	59	35	60	37	62	42	57	35	56	28
2....	38	25	37	31	36	25	38	33	38	28	38	33	39	29	39	32	37	32	35	27	37	30	40	29	38	29	41	28
3....	41	28	50	27	43	25	43	32	44	22	44	27	42	27	38	32	42	30	32	22	38	30	35	26	35	25	32	17
4....	52	38	50	40	50	34	52	33	50	33	54	34	51	32	53	36	54	38	49	30	52	33	54	32	45	25	53	15
5....	60	41	51	36	59	41	62	46	59	41	62	45	60	43	62	47	57	50	54	44	62	50	59	49	54	43	52	33
6....	53	48	55	45	53	42	68	53	60	50	64	52	57	50	69	54	65	55	64	51	67	53	68	55	62	49	66	30
7....	50	35	48	34	49	36	58	44	57	37	57	40	50	41	59	45	57	41	61	35	63	40	60	35	62	46	46	35
8....	52	35	47	38	49	37	51	36	54	31	53	35	56	35	49	40	48	35	39	34	46	37	45	37	41	34	46	35
9....	46	38	43	38	43	37	45	40	47	39	45	41	48	40	45	40	44	38	45	32	44	38	45	36	41	32	39	32
10....	59	40	47	37	58	38	58	40	64	40	62	42	63	40	55	42	53	37	42	31	51	34	46	36	40	32	39	27
11....	65	47	60	45	66	45	68	54	69	46	70	52	70	49	66	52	62	51	60	39	67	46	66	46	54	36	54	28
12....	61	54	61	48	60	45	65	58	64	50	66	57	66	53	63	58	59	46	59	38	64	42	63	47	55	39	59	41
13....	57	37	49	35	50	32	62	41	61	39	62	40	60	39	65	44	64	44	38	31	53	41	64	45	42	35	41	33
14....	37	29	38	32	32	26	41	34	42	34	40	32	39	29	44	35	47	36	41	32	48	36	49	37	42	34	40	36
15....	34	27	40	30	33	22	36	32	40	26	36	30	40	27	40	35	36	30	33	27	39	32	38	32	34	27	36	26
16....	46	27	43	25	42	24	46	30	49	23	48	27	50	28	45	36	46	29	34	35	42	30	58	30	32	25	30	17
17....	40	34	43	33	38	35	42	38	48	27	42	34	46	35	42	34	41	33	38	30	42	32	40	32	38	25	37	16
18....	45	32	49	27	45	30	45	33	50	28	48	31	50	30	41	35	39	31										



## CLIMATOLOGICAL DATA FOR NOVEMBER, 1912.

## DISTRICT No. 5—UPPER MISSISSIPPI VALLEY.

GEO. M. CHAPPEL, District Editor.

## GENERAL SUMMARY.

November concluded over much of the Upper Mississippi Valley one of the finest autumnal seasons in years. Like its immediate predecessor, the month was mild, dry, sunshiny, and free from storms of severity. The weather was in marked contrast to the wintry, inclement November a year ago. At Des Moines, Iowa, the month was the brightest of any in the present year. Almost ideal conditions for agriculturists prevailed, the weather being especially favorable for corn gathering, plowing, thrashing, and other operations. In the North Dakota area, where the adverse weather of September and October greatly retarded activities, November's fair skies enabled the delayed work to be brought almost up to date. A series of severe local storms moved across Illinois on the afternoon of the 12th. Some details of these appear under another heading.

The following table presents in condensed form the leading features of climatological interest for the various parts of the district:

Parts of States within district 5.	Temperature.				Precipitation.					
	Mean.	Departure.	Highest.	Lowest.	Average.	Departure.	Greatest total.	Least total.	Average snow-fall.	Average number of days with precipitation.
North Dakota....	30.3	+4.9	70	1	0.08	-0.51	0.70	0.00	0.8	1
Minnesota.....	34.0	+5.8	75	-1	0.36	-0.73	1.97	0.00	1.2	2
South Dakota....	36.0	+5.6	73	10	0.16	-0.46	0.28	0.04	1.0	1
Wisconsin.....	35.1	+3.1	69	-3	0.81	-0.71	2.82	0.05	1.7	3
Iowa.....	40.0	+4.5	75	8	1.08	-0.37	2.38	0.10	0.1	2
Missouri.....	44.4	+2.4	76	15	1.91	-0.33	2.45	0.11	T.	4
Indiana.....	41.1	+0.9	72	18	3.55	+0.83	4.06	3.00	1.0	8
Illinois.....	42.4	+2.3	77	8	1.88	-0.64	4.00	0.62	0.1	4

## TEMPERATURE.

The temperature averaged higher than usual in all parts of the district, the average daily excess of the mean temperature ranging from less than a degree in the Indiana area to almost 8° in the South Dakota area and surrounding North Dakota and Minnesota territory. In the latter section the month was one of the three or four mildest Novembers in the last 40 years. The mean temperature for the district was 37.4°, or 3.9° higher than the normal. Cairo Ill., with an average temperature of 48.5°, was the warmest station, and Pembina, N. Dak., with 24.4°, the coldest.

Over those parts of the district where the excess of temperature was greatest, only two or three days averaged colder than usual. On the 1st the coldest weather of the season to date was approaching from the northwest, and on the morning of the 2d a number of stations reported

the lowest temperatures of the month. The most important cold spell, however, culminated on Thanksgiving morning (28th), when the first zero weather of the season in this district occurred. Three stations in northern Wisconsin reported 3° below zero, that being the lowest recorded temperature of the month. The highest temperatures were experienced on or about the 10th, but at several northern points they occurred on or about the 19th. Monthly maximum temperatures of 70° or higher were reported from the warmer parts of the district, the highest being 88°, at Sublett, Mo., on the 7th. That was the only station with a temperature above 80°.

## PRECIPITATION.

Over almost 90 per cent of the district the precipitation was deficient. Most of the small number of stations having an excess are in the southern half. At 3 stations (2 in North Dakota and 1 in Minnesota) no precipitation whatever occurred, while only traces were reported from 10 stations in those States. The heaviest falls occurred at points in Illinois and Indiana, Laporte in the latter State having the greatest amount, 4.06 inches.

The average precipitation for all stations was 1.01 inches, or 0.54 inch less than the normal. By far the greater part of it occurred during the first half of the month. The precipitation of the latter half consisted mostly of snow flurries in the Northern States, from the 23d to 27th, inclusive. On the 1st, 5th-6th, and 12th-13th copious to heavy rains occurred in the southern part of the district. The last named was the most general storm. The average number of rainy days was 3.

## RIVERS.

At the close of the month the Mississippi River in the Davenport (Iowa) district was from 0.5 to 1 foot lower than at the close of October. Good boating stages still prevailed, but navigation had been suspended till next spring. In the Dubuque (Iowa) district the streams remained open, with thin ice running in the more northerly sections. In Minnesota the larger lakes were still unfrozen.

## MISCELLANEOUS.

The sunshine of the month was much above the normal in all parts of the district. At Des Moines, Iowa, the percentage of the possible was 81. The average number of clear days was 15; partly cloudy, 8; cloudy, 7. Northwestern winds prevailed, but at many stations the direction was southwesterly. The highest velocity reported was at the rate of 40 miles an hour from the northeast, on the 12th, at Madison, Wis., and from the south, on the 30th, at St. Paul, Minn.



**NOTE ON LOCAL STORMS IN ILLINOIS ON NOVEMBER 12, 1912.**

By CLARENCE J. ROOT, section director, Springfield, Ill.

In the evening of November 12, a year and a day after the Virginia (Ill.) tornado, a tornadic storm visited Randolph, Marion, and Clark Counties. A line drawn through these counties extends across the State in a northeasterly direction. Randolph County is on the western side of the State; Marion is in the interior; and Clark County, in the third climatological district, adjoins the Indiana line. The storm in Randolph County was reported by Mr. James A. Caldwell, cooperative observer

at Sparta, Ill. He states that it occurred about 6 p. m., moved from the southwest to northeast, and was funnel shaped and rotary. The path of the greatest destruction was from 100 to 300 feet wide. The storm caused considerable damage in the town of Eden, where the Willis Coal & Mining Co. estimate a loss of \$9,500. An insurance man states that he had 14 losses in houses and barns, and the damage to corn is said to be large. Three or four persons were slightly injured, but there was no loss of human life. The storm in Marion County caused damage to barns, outbuildings, and haystacks. A wind and hail storm visited parts of Morgan County, in central Illinois, in the afternoon of the same day.



TABLE 1.—Climatological data for November, 1912. District No. 5, Upper Mississippi Valley.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of overcast cloudy days.
North Dakota.																				
Amenia.	Cass.	954	15	33.2	+ 7.2	64	9	12	24	47	0.02	- 0.66	0.02	0.2	1	23	3	4	nw.	C. E. Wood.
Bottineau.	Bottineau.	1,638	17	28.0	+ 5.6	50	18	7	24	30	0.42	- 0.19	0.22	0.00	4	8	8	14	nw.	W. M. Mills.
Bowbells.	Burke.	1,958	11	31.9	- 0.6	60	9	8	27	39	0.00	0.00	0.00	0	0	20	1	9	sw.	G. H. Phelps.
Cando.	Towner.	1,488	11	26.9	- 0.6	50	20	5	27	32	0.03	- 0.52	0.03	0.3	1	1	25	3	sw.	E. T. Judd.
Crosby.	Divide.	6	6	32.8	- 0.6	62	9	11	26	32	0.11	0.11	1.0	0	1	25	3	2	sw.	H. C. Kaschau.
Devils Lake.	Ramsey.	1,482	7	26.9	+ 4.3	47	19	8	2	32	0.09	- 0.62	0.07	T.	3	1	16	4	sw.	U. S. Weather Bureau.
Donnybrook.	Ward.	1,760	13	31.8	+ 2.4	55	18	8	1	31	0.10	- 0.64	0.10	1.0	1	16	4	10	sw.	C. J. DeVore.
Dunseith.	Rolette.	1,524	15	28.6	+ 3.9	49	18	9	2	29	0.06	- 0.20	0.04	0.4	2	16	6	8	nw.	C. E. Goodsell.
Edmore.	Ramsey.	1,524	7																	M. M. Van Osdel.
Fessenden.	Wells.	1,610	18	33.5	+ 7.3	69	10	6	24	40	0.10	- 0.42	0.10	1.0	1	15	4	11	nw.	G. T. Seymour.
Forman.	Sargent.	1,249	18	33.5	+ 7.3	69	10	6	24	40	0.10	- 0.42	0.10	1.0	1	15	4	11	nw.	A. Maltby.
Grafton.	Walsh.	827	21	28.7	+ 7.1	47	6	12	2	31	0.08	- 0.71	0.04	0.5	2	14	9	7	n.	A. R. T. Wylie.
Granville.	McHenry.	1,504	6	27.0	- 0.1	50	19	12	3	32	0.01	0.01	0.01	0.2	1	20	4	6	w.	W. A. Christianson.
Hannah.	Cavalier.	1,568	7	26.8	- 0.1	45	19	1	2	30	0.10	0.10	1.0	1	1	1	1	1	sw.	J. Moffatt.
Hansboro.	Towner.	4	4	28.8	- 0.1	51	18	2	27	25	0.07	0.04	1.0	2	18	5	7	nw.	Geo. Dale.	
Hillsboro.	Trail.	901	7	32.9	- 0.1	56	18	16	27	33	0.02	0.02	T.	1	11	11	8	nw.	F. E. Mayall.	
Lakota.	Nelson.	1,579	6	29.0	- 0.1	52	19	8	2	32	0.07	0.04	1.7	3	8	18	4	sw.	C. R. Pettis.	
Langdon.	Cavalier.	1,615	17																	J. Woolner.
Larimore.	Grand Forks.	1,134	17	30.6	+ 5.8	55	19	12	2	34	0.10	- 0.21	0.04	1.7	4	18	11	1	s.	J. M. Freeman.
Lisbon.	Ransom.	1,091	8																	W. S. Adams.
McKinney.	Renville.	1,640	18	33.4	+ 10.5	58	19	10	23	44	T.	- 0.64	T.	T.	0	9	16	5	nw.	N. P. Swenson.
McLeod.	Ransom.	1,605	11	32.0	- 0.1	55	19	9	27	33	0.20	0.00	0.00	0	0	15	10	5	nw.	Martin Reinhold.
Manfred.	Wells.	1,605	11	32.0	- 0.1	55	19	9	27	33	0.20	0.10	2.0	0	2	14	9	7	nw.	P. B. Anderson.
Mayville.	Trail.	975	16	33.4	+ 6.7	58	19	11	26	39	0.02	- 0.71	0.02	0.2	1	16	3	11	nw.	W. C. Gould.
Minor.	Sargent.	1,097	16	33.4	+ 6.7	58	19	11	26	39	0.02	- 0.71	0.02	0.2	1	16	3	11	nw.	H. J. Edman.
Minto.	Ward.	1,557	14	31.9	+ 0.5	54	17	11	24	30	0.05	- 0.68	0.05	0.5	1	20	4	6	w.	W. J. Ellison.
Minto.	Walsh.	820	19	31.7	+ 7.6	52	19	13	2	29	0.07	- 0.54	0.07	0.7	1	11	5	14	nw.	S. S. Marsh.
Oriska.	Barnes.	1,270	7	32.2	- 0.1	66	19	5	24	40	T.	0.01	T.	T.	0	12	14	4	sw.	J. J. Taylor.
Park River.	Walsh.	998	9	30.7	- 0.1	54	19	15	27	30	0.01	0.01	T.	1	9	7	14	nw.	J. F. Prochaska.	
Pembina.	Pembina.	789	14	24.4	- 1.4	44	10	4	30	24	0.70	- 0.29	0.20	3.0	6	7	12	11	sw.	C. W. Shumaker.
Power.	Richland.	1,020	20	33.2	+ 7.3	64	10	9	24	42	0.03	- 0.55	0.03	0.5	3	16	6	8	w.	J. A. Power.
Towner.	McHenry.	4	4	28.6	- 0.1	44	18	7	2	34	0.10	0.10	1.0	1	7	12	11	1	sw.	B. Bagley.
University.	Grand Forks.	830	20	31.5	+ 4.9	57	19	15	27	36	0.10	- 0.66	0.04	1.0	4	10	6	14	nw.	U. S. Weather Bureau.
Wahpeton.	Richland.	962	20	29.1	+ 0.9	70	10	10	2	48	T.	- 0.53	T.	T.	0	15	6	9	nw.	Fred E. Smith.
Walhalla.	Pembina.	966	8	31.8	- 0.1	56	5	5	2	40	T.	0.01	T.	T.	0	19	11	0	s.	Ivanhoe Lee.
Westhope.	Bottineau.	6	6	30.5	- 0.1	54	18	7	24	37	0.07	0.05	0.7	2	14	12	4	w.	W. A. Meddaugh.	
Willow City.	do.	1,471	19	29.0	+ 8.3	49	18	8	24	26	0.10	- 0.36	0.10	1.0	1				sw.	M. A. Ostby.
Minnesota.																				
Albert Lea.	Freeborn.	1,229	21	37.2	+ 5.9	64	10	16	2	33	1.10	- 0.40	1.10	T.	1	9	19	2	nw.	Edward Carey.
Angus.	Polk.	870	10	30.2	+ 4.8	54	18	13	26	36	0.12	0.05	1.2	3	15	9	6	nw.	John Nadvornik.	
Bagley.	Clearwater.	6	6	30.5	- 0.1	58	10	9	28	33	0.42	0.20	4.0	5	13	13	4	sw.	Jens Nelson.	
Baudette.	Beltrami.	1,064	2																	J. A. Gjehaug.
Beardsley.	Bigstone.	1,090	16	36.4	+ 7.8	73	10	12	2	44	0.05	- 0.67	0.05	1.2	1	15	11	4	nw.	G. L. Fitzgerald.
Bemidji.	Beltrami.	1,400	9																	C. W. Warfield.
Bird Island.	Renville.	1,039	22	35.2	+ 5.3	66	10	11	28	43	T.	- 0.87	T.	T.	0	6	13	11	nw.	Dr. F. L. Puffer.
Brainerd.	Crow Wing.	1,215	5	33.4	- 0.1	65	10	10	28	37	0.21	0.12	2.1	2	17	6	7	nw.	Theodore Miller.	
Caledonia.	Houston.	1,179	19	37.0	+ 4.5	61	10	11	28	36	0.50	- 1.21	0.37	1.2	5	12	7	11	nw.	W. D. Belden.
Campbell.	Wilkin.	984	6	33.4	- 0.1	62	10	10	26	40	0.22	0.20	2.0	2	14	0	16	nw.	J. T. Neisess.	
Cass Lake.	Cass.	1,300	5																	C. W. Burns.
Collegeville.	Stearns.	1,282	19	35.6	+ 5.0	60	10	16	2	29	0.10	- 0.77	0.08	1.5	2	15	9	6	nw.	F. Tembreull.
Crookston.	Polk.	863	23	31.8	+ 6.9	55	18	15	27	27	0.08	- 0.65	0.05	0.8	2	9	5	16	s.	A. G. Anderson.
Detroit.	Becker.	1,364	16	31.2	+ 5.6	67	19	8	28	36	0.20	- 0.55	0.17	5.0	2	19	4	7	sw.	G. W. Peoples.
Ely.	St. Louis.	1	1	32.5	- 0.1	55	10	4	28	32	0.19	0.09	3.3	3	7	10	13	nw.	Iver Wisted.	
Fairmont (near).	Martin.	1,240	25	37.9	+ 7.0	65	10	13	27	31	0.40	- 0.91	0.40	T.	1	17	10	3	nw.	W. F. Wherland.
Faribault.	Rice.	1,003	14																	A. B. Moulton.
Farmington.	Dakota.	902	24	36.2	+ 5.8	67	10	9	28	38	0.48	- 0.83	0.48	T.	1	13	7	10	s.	E. D. Akin.
Fergus Falls.	Ottotail.	1,210	20	33.6	+ 6.0	60	10	12	26	29	0.28	- 0.54	0.22	2.5	3	11	15	4	nw.	C. E. Kissinger.
Fort Ripley.	Crow Wing.	1,136	4	30.2	- 0.1	63	10	1	28	44	0.25	- 0.49	0.09	1.0	3	22	0	8	s.	J. O. Tucker.
Fosston.	Polk.	1,289	2	30.8	- 0.1	60	10	8	27	31	0.32	0.11	1.7	5	13	12	5	nw.	N. N. Hem.	
Glencoe.	McLeod.	1,000	15	36.8	+ 5.4	63	10	10	24	37	0.00	- 1.02	0.00	0	0	21	8	1	nw.	L. V. Koos.
Grand Meadow.	Mower.	1,338	24	36.4	+ 6.1	62	10	9	28	33	1.97	+ 0.60	1.90	T.	0	2	14	5	s.	C. F. Greening.
Gull Lake Dam.	Cass.	1,215	1	33.8	- 0.1	63	10	10	28	34	0.23	- 0.15	3.0	3	17	7	6	nw.	U. S. Engineer Corps.	
Hallock.	Kittson.	815	13	30.8	+ 5.7	52	18	14	29	26	0.07	- 0.59	0.07	0.8	1	18	1	11	s.	D. A. Robertson.
Halstad.	Norman.	870	6	29.8	- 0.1	58	10	9	2	37	T.	0.01	T.	T.	0	11	5	14	nw.	A. G. Holstrom.
Hinckley.	Pine.	1,057	7	32.9	- 0.1	57	10	4	28	39	0.25	0.25	2.5	1	15	3	11	n.	W. R. Newman.	
International Falls.	Koochiching.	1,112	9	31.4	- 0.1	51	3	8	29	30	0.27	0.20	2.7	3	8	4	18	n.	C. Ardies.	
Itasca State Park.	Clearwater.	1,500	1	34.5	- 0.1	64	19	9	28	42	0.04	0.02	0.4	3	10	10	10	s.	J. A	



TABLE 1.—Climatological data for November, 1912. District No. 5—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.					Sky.					Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.				
Minnesota—Continued.																						
St. Charles	Winona	850	21	35.2	+ 4.1	63	10	6	28	34	1.00	- 0.26	1.00	T.	1	14	5	11	se.	S. W. Gleason.		
St. Cloud	Sherburne	1,020	35	37.0	+ 6.1	60	10	10	28	33	0.08	- 1.09	0.01	0.1	1	22	5	3	s.	J. H. Casper.		
St. Paul	Ramsey	940	41	37.6	+ 4.9	61	20	12	28	38	0.30	- 1.22	0.04	0.7	4	10	14	6	nw.	U. S. Weather Bureau.		
St. Peter	Nicollet	825	17	37.6	+ 5.3	60	10	1	28	35	0.16	- 0.78	0.30	0	1	13	13	4	s.	State Hospital.		
Sandy Lake Dam	Aitkin	1,234	19	32.2	+ 5.3	60	10	1	28	35	0.16	- 1.06	0.16	1.8	1	11	12	7	w.	U. S. Engineer Corps.		
State Sanatorium	Cass	694	4	33.3		58	10	11	28	28	0.46		0.18	2.2	4	17	4	9	w.	Dr. L. B. Ohlger.		
Stillwater	Washington	694	6			60	10				T.		T.	0	14	1	15	s.	Oscar Ostrom.			
Taylor Falls	Chisago	759	5	35.8		60	10	8	28	31	0.07		0.07	0.8	1	16	7	7	nw.	Minneapolis Gen. Elec. Co.		
Thief River Falls	Pennington	1,137	1	31.3		52	19	15	28	35	0.10		0.10	1.0	1	16	1	13	s.	E. W. Low.		
Tracy	Lyon		1																	E. D. Davis.		
Warren	Marshall	859	2	31.3		55	18	12	24	34					11	19	0			P. H. Holm.		
Warroad	Roseau	1,069	2	29.1		47	18	10	27	23	0.55		0.50	0.5	2	20	2	8	w.	G. A. Sawyer.		
Winnabago	Faribault	1,100	14	38.0	+ 4.0	66	10	13	28	41	0.60	- 0.72	0.60	T.	1	17	10	3	sw.	H. H. Haight.		
Winnibigoshish	Itasca	1,300	24	33.6	+ 7.9	60	11	9	28	32	0.74	- 0.36	0.36	3.8	4	17	4	9	w.	U. S. Engineer Corps.		
Winona	Winona	700	16	38.4	+ 5.2	64	11	12	28	30	0.73	- 0.70	0.71	0.5	2	15	8	7	nw.	P. C. Myers.		
Worthington	Nobles	1,593	17	35.5	+ 4.4	66	10	13	24	32	0.15	- 0.99	0.15	T.	1	18	6	6	sw.	M. P. Mann.		
Zumbrota	Goodhue	917	16	36.7	+ 5.1	66	10	7	28	37	1.35		1.35	0.2	1	18	8	4	sw.	W. C. Rowell.		
South Dakota.																						
Milbank	Grant	1,148	21	35.2	+ 5.6	73	10	10	26	44	0.28	- 0.46	0.28	1.7	1	14	10	6	nw.	Miss Mary Patridge.		
Sisseton	Roberts	1,202	6	36.8		68	9	15	24	34	0.04		0.04	0.4	1	23	0	7	nw.	George Gray.		
Wisconsin.																						
Antigo	Langlade	1,489	18	33.2	+ 1.8	58	5	10	28	30	0.90		0.22	6.5	6	14	1	15	w.	Elton C. Larzelere.		
Baron	Barron	1,115	21	33.3	+ 3.8	56	10	4	28	33	0.10	- 1.28	0.10	1.0	1	13	13	4	sw.	Wm. A. Kent.		
Beloit	Rock	750	46	37.8	+ 0.9	69	11	16	28	35	2.11	+ 0.20	1.01	1.0	4	13	0	17	nw.	Smith Observatory.		
Big St. Germain Dam	Vilas	1,590	2	31.8		58	10	5	28	36	0.23		0.11	6.5	4	11	9	10	sw.	Fred Hesse.		
Brodhead	Green	812	14	38.7	+ 0.8	69	11	15	28	34	1.93	+ 0.12	0.82	T.	3	12	12	6	nw.	Hector D. Kirkpatrick.		
Burnett	Dodge	880	8	37.3		64	11	14	28	27	1.43		1.05	1.0	3	7	11	12	nw.	Geo. W. Smith.		
Cornell	Chippewa	993	0								0.41		0.31	T.	3	21	6	3	sw.	Brunet Falls Mfg. Co.		
Cottage Grove	Dane	888	1								1.11		0.42	0.9	6	17	6	7	sw.	John E. Mellish.		
Darlington	Lafayette	867	6	37.8		67	11	10	28	36	1.20		0.70	T.	2	19	1	10	nw.	F. J. O'Neill.		
Deerskin Dam	Forest	1,685	2	30.2		56	20	4	28	42	0.41		0.23	2.5	2	4	11	15	nw.	Wm. E. O'Neal.		
Delavan	Walworth	920	21	38.0	+ 4.4	68	11	16	29	30	2.82	+ 0.97	1.70	1.0	4	10	7	13	sw.	Elwood S. Austin.		
Dodgeville	Iowa	1,220	12																	Thomas Gibbon.		
Downing	Dunn	983	10	33.8	+ 3.5	56	19	5	28	39	0.40	- 0.93	0.40	T.	1	7	2	20	w.	Eugene F. Stoddard.		
Eau Claire	Eau Claire	800	21	36.1	+ 4.0	62	10	10	28	37	0.72	- 0.95	0.70	0.1	3	9	12	9	w.	Robert D. Whitford.		
Glen Flora	Rusk	1,475	0	32.3		59	10	3	28	36	0.30		0.20	1.6	4	19	3	8	nw.	F. W. Oelschlaeger.		
Grand Rapids	Wood	1,021	13	34.6	+ 1.9	64	11	8	28	33	1.12	- 0.56	0.95	1.2	5	10	13	7	sw.	Willis B. Raymond.		
Grantsburg	Burnett	1,095	21	32.6	+ 1.8	57	4	2	27	39	0.15	- 1.29	0.15	1.5	1	15	6	9	nw.	Theodore Olsen.		
Hancock	Waushara	1,091	20	36.8	+ 3.8	64	11	10	28	34	0.75	- 0.65	0.60	T.	3	12	10	8	sw.	Frederick B. Hamilton.		
Hatfield	Jackson	973	18	34.1	+ 1.7	67	10	2	28	45	1.13	- 0.48	1.13	T.	1	7	14	9	sw.	Walter S. Woods.		
Hayward	Sawyer	1,107	21	31.8	+ 2.6	62	10	3	28	37	0.22	- 1.32	0.10	2.2	3	15	2	9	sw.	A. E. Johnson.		
Hillsboro	Vernon	1,000	21	35.0	+ 2.2	64	11	5	28	38	0.85	- 0.78	0.85	T.	1	16	9	5	sw.	Emil V. Wernick.		
Koepenick	Langlade	1,683	21	32.3	+ 0.9	62	10	6	28	34	2.10	+ 0.12	0.80	18.0	8				sw.	Edward S. Koepenick.		
Lac du Flambeau	Vilas	714	2																	W. J. Lovett.		
La Crosse	La Crosse	897	40	38.4	+ 4.6	65	11	13	28	30	0.90	- 0.62	0.82	0.1	2	10	4	16	s.	U. S. Weather Bureau.		
Lake Mills	Jefferson	897	21	38.6	+ 3.9	66	11	17	28	25	1.16	- 0.95	0.38	0.4	5	12	11	7	sw.	S. Newton Dexter Smith.		
Lancaster	Grant	1,070	21	39.0	+ 5.1	64	10	21	18	32	0.72	- 1.04	0.72	T.	1	1	13	16		Edward Pollock.		
Long Lake	Oneida	1,592	4	30.5		59	10	3	28	40	0.45		0.19	4.0	6	13	5	12	s.	Louis Frank.		
Madison	Dane	974	43	38.6	+ 4.4	64	11	15	28	22	0.89	- 0.91	0.85	0.2	4	11	9	10	sw.	U. S. Weather Bureau.		
Marshfield	Wood	1,276	0																	Ag. Exper. Station.		
Mather	Juneau	962	8	33.8		62	10	7	28	37	0.50		0.48	T.	2	15	3	12	w.	Frank Evans.		
Mauston	do.	882	16	36.8	+ 2.1	63	11	14	28	31	0.95	- 0.69	0.85	T.	2	12	11	7	nw.	Eugene L. Hitchcock.		
Meadow Valley	do.	974	21	36.2	+ 3.9	64	11	6	28	36	0.57	- 0.96	0.49	T.	2	7	18	5	sw.	Charles H. Johnson.		
Medford	do.	1,420	23	33.4	+ 3.2	57	10	4	28	31	0.55	- 1.02	0.40	1.5	3	15	10	5	w.	Wm. Zeit.		
Merrill	Taylor	1,267	6	34.6		58	11	4	28	34	0.78		0.43	1.0	3	18	0	12	n.	Wm. T. Hunter.		
Minocqua	Lincoln	1,604	8	33.1		60	10	8	28	32	0.26		0.10	2.5	4	7	13	10	sw.	Benjamin W. Applebee.		
Mondovi	Oneida	738	4	36.2		59	10	8	28	36	1.14		0.62	1.6	9	16	8	6	nw.	Dr. Charles Hebard.		
Mount Horeb	Buffalo	1,226	8	37.4		66	11	9	28	30	1.43		1.01	3.6	5	13	5	12	sw.	W. M. Lewis.		
Muscoda	Dane	666	3	36.8		65	11	7	28	39	0.82		0.82	T.	1	20	1	9	sw.	Wm. Hessler.		
Neillsville	Grant	996	22	34.6	+ 3.3	68	5	10	28	40	0.95	- 0.79	0.95	T.	1				nw.	Wm. Heaslett.		
New Richmond	Clark	990	7	35.0		64	10	8	28	43	0.05		0.05	T.	1	13	14	3	nw.	Franc A. R. Van Meter.		
Osceola	St. Croix	806	21	35.6	+ 5.9	61	10	7	28	35	0.10	- 1.29	0.05	1.0	2	14	9	7	s.	Charles W. Staples.		
Park Falls	Polk	809	23	38.4	+ 2.6	64	11	17	28	30	0.87	- 0.67	0.83	0.2	3	15	5	10	sw.	Flambeau Paper Co.		
Portage	Price	969	2	31.8		59	20	6	28	35	0.34		0.40	0.8	3	15	8	7	w.	James H. Martin.		
Port Edwards	Columbia	628	21	38.0	+ 1.6	65	11	12	28	39	0.32	- 1.25	0.16	T.	2	14	7	9	s.	Nekoosa-Edwards Pa. Co.		
Prairie du Chien	Wood	750	4	37.4		66	11	15	28	33	0.70		0.40	T.	2	12	11	7	sw.	James A. Gillis.		
Prairie du Sac	Crawford	1,551	14	33.4	+ 1.7	61	10	5	28	35	0.44	- 1.31	0.11	3.0	6	12	3	15	w.	Wis. River Power Co.		
Prentice	Sauk	1,550	6	33.1		61	10	6	28	37	0.85		0.32	7.2	7	16	2	12	sw.	Joseph G. Lash.		
Rhineland	Price	1,019	6	38.1		66	11	13	28	27	1.26											



TABLE 1.—Climatological data for November, 1912. District No. 5—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of overcast days.
Iowa—Continued.																				
Ames.	Iowa.	721	36	40.2	+ 6.4	68	11	14	28	31	1.70	- 0.03	0.88	T.	4	18	8	4	Conrad Schadt.	
Ames.	Story.	926	36	40.3	+ 6.2	70	10	15	27	38	0.93	- 0.26	0.92	T.	2	18	8	4	Iowa State College.	
Baxter.	Jasper.	998	12	40.7	+ 3.4	70	4†	10	27	37	0.68	- 0.65	0.68	T.	2	22	7	1	W. R. Vandike.	
Belle Plaine.	Benton.	886	22	40.8	+ 5.9	70	10	16	27	33	1.57	- 0.15	1.11	T.	2	18	8	4	O. Burrows.	
Belmond.	Wright.	5	5	37.5	.....	68	10	12	28	37	0.79	.....	0.78	0.1	3	9	18	3	Geo. P. Hardwick.	
Bloomfield.	Davis.	5	5	43.6	.....	71	10	19	25	40	1.73	.....	0.98	0	3	24	0	6	Albert Power.	
Bonaparte.	Van Buren.	21	21	43.1	+ 4.6	72	10†	19	27	34	1.33	- 0.47	0.65	T.	3	15	10	5	B. R. Vale.	
Boone.	Boone.	1,134	7	40.2	.....	70	10	10	28	41	0.56	.....	0.56	T.	1	20	2	8	C. F. Henning.	
Britt.	Hancock.	1,236	15	37.6	+ 4.0	67	10	13	25	35	1.04	- 0.07	1.02	0.1	3	15	10	5	L. M. Goodman.	
Buckingham.	Tama.	12	12	42.2	+ 2.5	73	11	20	27	39	1.94	+ 0.16	1.02	T.	3	19	5	6	J. S. Guynn.	
Burlington.	Des Moines.	544	16	42.2	+ 2.5	73	11	20	27	39	1.94	+ 0.16	1.02	T.	3	19	5	6	Max. E. Poppe, Jr.	
Carroll.	Carroll.	1,265	22	37.9	+ 3.7	69	10	14	24	40	0.91	- 0.22	0.91	0	1	20	5	5	Mrs. Jos. J. Wolfe.	
Cedar Rapids.	Linn.	733	30	40.0	+ 4.1	69	11	16	28	39	1.36	- 0.04	0.74	T.	2	16	5	9	R. S. Toogood.	
Charles City.	Floyd.	1,015	21	37.4	+ 4.4	65	10	13	28	34	0.64	- 0.75	0.64	T.	1	7	14	9	U. S. Weather Bureau.	
Clear Lake.	Cerro Gordo.	1,241	14	39.2	+ 5.1	66	10	12	28	38	0.60	- 0.47	0.60	0	1	28	0	2	Oscar Stevens.	
Clinton.	Clinton.	593	45	39.9	+ 4.2	71	11	14	28	34	1.06	- 0.78	0.81	T.	3	9	18	3	A. E. Reed.	
Columbus Junction.	Louisa.	595	11	42.6	+ 3.6	72	11	18	28	28	1.46	- 0.05	0.68	T.	3	23	4	3	J. B. Johnston.	
Davenport.	Scott.	580	41	42.3	+ 4.8	71	11	20	28	26	0.98	- 0.78	0.62	T.	4	9	15	6	U. S. Weather Bureau.	
Decorah.	Winnebago.	875	19	37.5	+ 4.0	62	10†	8	28	33	0.77	- 0.78	0.75	0.2	2	.....	.....	.....	F. H. Baker.	
Delaware.	Delaware.	1,083	21	39.1†	+ 6.3	66	10	9†	28	33†	0.85	- 0.72	0.84	0.1	2	.....	.....	.....	William Ball.	
Des Moines.	Polk.	861	34	43.0	+ 6.2	70	10	21	2	31	1.11	- 0.37	1.08	0.2	3	15	11	4	U. S. Weather Bureau.	
Dubuque.	Dubuque.	639	39	40.6	+ 4.6	68	11	17	28	29	1.51	- 0.30	1.33	0.1	5	7	15	8	Do.	
Earlham.	Madison.	10	10	40.2	+ 2.4	70	10	13	25	39	1.37	+ 0.03	1.37	T.	2	23	3	4	George Phillips.	
Elkader.	Clayton.	727	33	37.5	+ 4.3	65	9†	10	28	34	0.75	- 0.90	0.75	T.	1	13	7	10	Chas. Reinecke.	
Elma.	Howard.	2	2	36.4	.....	63	10	8	28	36	0.42	.....	0.40	T.	2	17	10	3	H. A. Moore.	
Estherville.	Emmet.	1,298	17	36.9	+ 5.6	72	10	14	28	40	0.50	- 0.74	0.50	T.	1	19	9	2	A. O. Peterson.	
Fairfield.	Jefferson.	28	28	42.4	+ 5.5	70	11	17	28	40	0.98	- 1.30	0.49	T.	4	24	0	6	S. M. McKenzie.	
Fayette.	Fayette.	1,003	22	37.0	+ 4.1	65	10	9	28	35	0.65	- 0.97	0.65	T.	1	15	10	5	R. Z. Latimer.	
Forest City.	Winnebago.	1,226	18	37.0	+ 4.6	65	11	12	28	39	1.70	+ 0.47	1.70	T.	1	17	8	5	J. A. Peters.	
Fort Dodge.	Webster.	1,126	12	39.4	+ 4.2	71	10	17	24	42	0.60	- 0.62	0.48	T.	2	.....	.....	.....	J. F. Monk.	
Fort Madison.	Lee.	516	63	.....	.....	.....	.....	.....	.....	.....	1.88	- 0.26	1.23	T.	3	13	9	8	Miss L. A. McCready.	
Gilman.	Marshall.	1,052	13	.....	.....	.....	.....	.....	.....	.....	0.68	- 0.72	0.63	T.	2	.....	.....	.....	J. L. Wylie.	
Grand Meadow.	Clayton.	1,180	21	37.8	+ 4.8	63	10	12	28	31	0.56	- 1.00	0.51	0.2	3	9	15	6	F. L. Williams.	
Grinnell.	Poweshiek.	1,023	20	42.4	+ 4.4	70	10	16	27	42	1.96	+ 0.33	0.83	T.	3	20	5	5	D. W. Brinnard.	
Grundy Center.	Grundy.	976	21	41.6	+ 3.6	68	10	14	28	34	1.00	- 0.22	0.75	T.	2	21	5	4	J. B. Calderwood.	
Guthrie Center.	Guthrie.	1,077	17	41.2	+ 3.9	70	10	16	28	40	0.56	- 0.59	0.53	T.	2	22	7	1	D. G. Beardsley.	
Hampton.	Franklin.	1,155	22	40.2	+ 6.8	69	10	14	28	34	0.65	- 0.91	0.50	T.	2	9	18	3	E. C. Grenelle.	
Humboldt.	Humboldt.	1,095	24	38.6	+ 4.6	70	10	11	27	40	0.71	- 0.66	0.71	0	1	26	3	1	J. F. Peterson.	
Independence.	Buchanan.	921	48	38.7	+ 6.1	66	10	9	28	33	1.65	+ 0.33	1.37	T.	2	17	9	4	R. E. Dudley.	
Indianola.	Warren.	969	21	42.3	+ 4.0	68	10	19	27	30	1.74	+ 0.32	1.39	T.	3	16	3	11	Prof. J. L. Tilton.	
Iowa City.	Johnson.	683	52	39.3	+ 3.6	70	11	14	28	40	1.11	- 1.15	0.58	T.	2	15	8	7	Prof. A. G. Smith.	
Iowa Falls.	Hardin.	1,170	19	37.2	+ 4.1	68	10	14	25†	40	0.70	- 0.55	0.70	T.	2	20	3	7	J. B. Parmelee.	
Jefferson.	Greene.	13	13	40.2	.....	70	10†	15	27	40	0.43	- 0.88	0.40	0.3	2	22	4	4	Ora M. Hall.	
Keokuk.	Lee.	547	41	44.4	+ 5.0	74	11	21	25	27	1.81	- 0.04	1.40	T.	4	15	11	4	U. S. Weather Bureau.	
Keosauqua.	Van Buren.	644	20	41.1	+ 2.2	72	11	17	15†	41	1.48	- 0.02	0.83	T.	3	9	15	6	J. H. Landes.	
Knoxville.	Marion.	920	17	43.0	+ 5.5	70	10	20	25†	31	0.87	- 0.42	0.40	T.	3	19	4	7	Casey and Bellville.	
Lacona.	Warren.	13	13	.....	.....	.....	.....	.....	.....	.....	1.55	+ 0.08	1.15	0.2	5	7	18	5	J. B. Alter.	
Lansing.	Allamakee.	632	.....	.....	.....	.....	.....	.....	.....	.....	0.68	.....	0.60	T.	4	.....	.....	.....	Chas. R. Serene.	
Le Claire.	Scott.	576	12	.....	.....	.....	.....	.....	.....	.....	1.27	- 0.20	0.66	0.1	4	.....	.....	.....	Miss M. T. Disney.	
Marshalltown.	Marshall.	947	20	40.6	+ 4.6	73	10	12	25	43	0.73	- 0.56	0.70	T.	2	13	12	5	Jacob Eige.	
Mason City.	Cerro Gordo.	1,132	15	37.2	+ 4.4	65	10	12	28	36	0.62	- 1.02	0.62	T.	1	19	5	6	J. S. Mills.	
Monroe.	Jasper.	42.0	70	42.0	.....	70	10	17	27	34	0.76	.....	0.44	0.2	3	22	4	4	J. A. Dibel.	
Mount Pleasant.	Henry.	729	31	42.0	+ 4.6	71	11	18	28	29	1.49	- 0.07	0.80	T.	3	18	8	4	J. W. Edwards.	
Muscataine.	Muscataine.	52	52	.....	.....	.....	.....	.....	.....	.....	1.32	- 0.98	0.72	T.	3	.....	.....	.....	William Molis.	
New Hampton.	Chickasaw.	1,169	15	38.6	+ 3.9	64	10	13	28	32	0.80	- 0.60	0.80	0	1	22	5	3	A. F. Kemman.	
Nora Springs.	Floyd.	1,064	.....	40.0	.....	70	10	10	28	40	0.62	.....	0.62	T.	1	19	8	3	Arthur Betts.	
Northwood.	Worth.	1,122	16	36.0	+ 2.8	61	11	11	28	34	1.80	+ 0.52	1.80	T.	1	15	14	1	Chas. H. Dwell.	
Olin.	Jones.	760	14	40.0	+ 3.2	68	10†	11	28	33	2.33	+ 1.09	1.33	T.	3	16	11	3	Dr. F. W. Port.	
Osage.	Mitchell.	1,184	25	37.8	+ 6.9	64	10	13	28	34	0.75	- 0.73	0.75	0	1	20	5	5	Lester Conrardt.	
Oskaloosa.	Mahaska.	843	36	41.2	+ 4.2	70	10	15	2	33	1.23	- 0.26	0.75	0.2	4	21	1	8	Joseph Boyd.	
Ottumwa.	Wapello.	649	17	.....	.....	.....	.....	.....	.....	.....	0.10	- 1.50	0.10	0	1	21	3	6	Chester Potter.	
Pella.	Marion.	877	10	41.0	+ 3.7	70	10	11	25	37	1.02	- 0.41	0.65	0.6	3	25	0	5	J. H. Ver Steeg.	
Perry.	Dallas.	975	11	41.2	+ 3.4	71	10	14	28	41	0.52	- 0.93	0.52	T.	2	15	13	2	S. J. Brumfield.	
Pocahontas.	Pocahontas.	1,248	8	39.6	.....	70	10	16	27	39	1.35	.....	1.35	T.	1	25	4	1	F. E. Hronek.	
Rockwell City.	Calhoun.	16	16	38.9	+ 3.9	70	10	17	24	37	0.60	- 0.50	0.60	T.	1	26	3	1	C. M. Randall.	
Sac City.	Sac.																			



TABLE 1.—Climatological data for November, 1912. District No. 5—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Indiana.																				
Collegeville.....	Jasper.....	13	41.4	+ 0.4	72	11	18	28	32	3.52	+ 1.02	1.91	T.	4	13	10	7	w.	Otto Miller.	
Knox.....	Starke.....	716	41.6	.....	70	11	19	28	29	3.73	.....	1.28	1.9	9	17	5	8	w.	W. R. R. Tatman.	
Laporte.....	Laporte.....	810	40.2	+ 0.5	70	11	20	28	31	4.06	+ 1.28	1.35	1.1	9	15	1	14	nw.	Wm. M. Walton, jr.	
Plymouth.....	Marshall.....	790	40.9	.....	70	11	19	28	29	3.45	.....	1.09	1.1	8	11	11	8	sw.	J. W. Siders.	
South Bend.....	St. Joseph.....	726	41.3	+ 1.7	71	11	22	28	26	3.00	+ 0.18	1.03	1.0	10	12	9	9	sw.	Henry H. Swaim.	
Illinois.																				
Aledo.....	Mercer.....	738	42.3	+ 4.4	71	11	16	28	30	0.88	- 1.09	0.34	T.	3	17	7	6	s.	Wm. B. Frew.	
Alexander.....	Morgan.....	670	43.0	+ 0.7	73	10	17	28	33	1.56	- 0.49	0.62	T.	4	17	6	7	nw.	George H. Hall.	
Antioch.....	Lake.....	861	39.0	+ 1.6	67	12	18	24	32	1.75	- 0.40	0.95	T.	3	12	8	10	sw.	J. C. James.	
Astoria.....	Fulton.....	650	43.1	+ 2.6	74	11	21	25	32	1.97	+ 0.06	1.00	T.	5	18	6	6	sw.	Edward V. Bohl.	
Aurora.....	Kane.....	678	40.2	+ 2.8	71	11	15	28	31	1.70	- 0.73	1.05	T.	2	9	11	10	sw.	W. Holden.	
Beardstown.....	Cass.....	448	.....	.....	72	10	18	28	38	2.13	.....	0.75	T.	4	25	0	5	s.	Mrs. L. M. Rice.	
Bement.....	Platt.....	700	43.2	.....	71	10	18	28	38	2.13	.....	0.75	T.	4	25	0	5	s.	N. N. Stevenson.	
Bloomington.....	McLean.....	840	42.3	+ 1.7	71	10	19	28	27	2.32	- 0.27	0.85	T.	6	18	4	8	nw.	Prof. H. N. Pearce.	
Cairo.....	Alexander.....	359	48.5	+ 1.6	75	10	26	28	27	0.62	- 3.40	0.36	0	3	16	8	6	s.	U. S. Weather Bureau.	
Carbondale.....	Jackson.....	412	46.8	.....	76	10	21	25	39	1.90	.....	1.37	0	5	23	2	5	sw.	State Normal University.	
Carlinville.....	Macoupin.....	663	44.5	+ 1.8	75	10	19	28	35	3.06	+ 0.48	1.35	T.	4	18	8	4	s.	Blackburn College.	
Carlyle.....	Clinton.....	470	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hervey O. Jones.	
Chester.....	Randolph.....	380	20	.....	.....	.....	.....	.....	.....	3.36	+ 0.28	2.18	0	6	.....	.....	.....	.....	Charles S. Gollon.	
Clinton.....	Dewitt.....	727	42.4	.....	71	11	17	28	28	4.00	.....	1.16	T.	5	19	4	7	nw.	J. Frank Ziegler.	
Coatsburg.....	Adams.....	763	42.8	+ 1.7	73	11	19	25	29	2.06	0.00	1.00	T.	3	15	9	6	s.	Dr. J. R. Lambert.	
Cobden.....	Union.....	656	47.6	+ 0.6	75	10	21	28	29	2.65	- 1.52	1.46	0	3	20	3	7	s.	John Buck.	
Dakota.....	Stephenson.....	929	38.5	.....	70	11	12	29	33	1.42	.....	0.89	T.	4	8	12	10	nw.	Elmer G. Smith.	
Decatur.....	Macon.....	685	43.2	+ 1.9	72	10	18	28	30	2.09	- 0.43	1.05	T.	4	23	3	4	nw.	Prof. J. H. Conradt.	
Dixon.....	Lee.....	725	40.1	+ 3.4	72	11	16	28	40	1.38	- 0.37	0.85	T.	4	17	5	8	.....	H. U. Bardwell.	
Du Quoin.....	Perry.....	459	46.8	+ 1.5	75	10	21	28	38	1.54	- 1.27	1.30	0	3	21	5	4	nw.	G. H. Knetzger.	
Dwight.....	Livingston.....	600	41.5	+ 2.1	70	11	17	28	31	2.16	- 0.36	0.83	0.2	6	13	6	11	nw.	Edward O. Welch.	
East St. Louis.....	St. Clair.....	481	.....	.....	.....	.....	.....	.....	.....	3.03	.....	1.41	T.	4	.....	.....	.....	.....	W. McK. Brown.	
Edwardsville.....	Madison.....	554	40.8	.....	69	11	18	28	29	1.82	- 1.30	1.22	T.	3	.....	.....	.....	.....	W. H. Morgan.	
Elgin.....	Kane.....	716	40.8	.....	69	11	18	28	29	1.84	.....	0.84	T.	4	7	15	8	sw.	Elgin Observatory.	
Ewing.....	Franklin.....	449	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ewing College.	
Fairview.....	Fulton.....	733	.....	.....	.....	.....	.....	.....	.....	1.79	.....	0.91	T.	5	.....	.....	.....	.....	Abram Wilson.	
Galva.....	Henry.....	852	41.2	+ 3.5	70	11	15	28	41	2.17	+ 0.34	1.11	T.	5	15	8	7	s.	Prof. F. U. White.	
Grafton.....	Jersey.....	422	.....	.....	.....	.....	.....	.....	.....	2.70	+ 0.31	1.80	.....	4	.....	.....	.....	.....	R. C. Goodrich.	
Greenville.....	Bond.....	635	44.6	+ 2.0	75	10	20	28	37	1.78	- 1.53	0.85	0	4	21	2	7	s.	H. W. Reidemann.	
Griggsville.....	Pike.....	650	45.0	+ 3.0	75	10	21	28	25	27	1.45	- 0.73	0.70	0	4	18	7	5	sw.	Geo. F. Kneeland.
Havana.....	Mason.....	475	42.4	+ 2.4	74	11	19	28	38	1.50	- 0.60	0.75	T.	4	21	3	6	nw.	L. L. Eutenener.	
Henry.....	Marshall.....	500	41.9	+ 3.2	70	11	17	28	33	2.21	- 0.16	1.15	T.	5	18	6	6	sw.	Dr. F. A. Powell.	
Hillsboro.....	Montgomery.....	675	45.2	+ 1.4	75	11	21	28	31	1.85	- 0.72	0.65	T.	4	18	2	10	s.	Ira L. Woodward.	
Joliet.....	Will.....	609	40.8	+ 2.1	72	11	19	30	33	1.67	- 0.60	0.89	0.3	6	12	10	8	sw.	F. M. Muhlig.	
Kishwaukee.....	Winnebago.....	730	39.8	+ 2.8	70	11	14	28	31	1.23	- 1.01	0.97	0.4	4	11	13	6	sw.	George Stevens.	
La Grange.....	Cook.....	657	41.0	+ 2.8	72	11	19	28	32	1.48	- 0.84	1.20	0.5	3	17	7	6	s.	Prof. F. E. Sanford.	
La Harpe.....	Hancock.....	698	42.6	+ 2.9	75	11	17	28	32	2.06	+ 0.10	1.59	1.5	5	21	7	2	sw.	George E. Campbell.	
Lanark.....	Carroll.....	883	38.9	+ 2.9	70	11	8	28	34	1.78	- 0.24	1.20	T.	4	20	3	7	s.	M. N. Wertz.	
La Salle.....	La Salle.....	536	41.8	+ 4.0	70	11	19	28	27	1.54	- 1.10	1.06	0.1	5	11	13	6	sw.	U. S. Weather Bureau.	
Lincoln.....	Logan.....	575	42.4	+ 1.3	74	10	18	25	36	2.32	+ 0.04	1.35	T.	4	20	5	5	nw.	Prof. C. S. Oglevee.	
Loami.....	Sangamon.....	624	.....	.....	.....	.....	.....	.....	.....	1.79	- 0.33	0.75	T.	4	15	4	11	nw.	H. C. Foster.	
Macomb.....	McDonough.....	700	.....	.....	.....	.....	.....	.....	.....	0.62	.....	0.41	T.	4	.....	.....	.....	.....	State Normal University.	
Manteno.....	Kankakee.....	711	.....	.....	.....	.....	.....	.....	.....	2.99	.....	1.31	1.8	6	17	9	4	sw.	J. F. Schmeltzer.	
Martinton.....	Iroquois.....	633	41.4	+ 1.9	71	11	18	28	32	2.15	- 0.29	0.65	T.	5	12	8	10	sw.	Joseph H. Peltier.	
Mascoutah.....	St. Clair.....	425	45.4	+ 1.0	77	11	19	28	39	1.20	- 1.97	0.48	0	3	18	9	3	nw.	George Henrich.	
Minonk.....	Woodford.....	745	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. R. Morris.	
Monmouth.....	Warren.....	784	42.2	+ 2.3	72	11	17	28	31	1.98	+ 0.13	0.95	T.	5	19	5	6	w.	Dr. J. C. Hutchison.	
Morris.....	Grundy.....	518	41.0	.....	71	11	17	28	33	1.93	.....	1.04	0.2	5	14	13	3	sw.	E. G. Cryder.	
Morrison.....	Whiteside.....	685	40.8	+ 2.8	72	11	11	28	35	1.25	- 0.65	0.77	0.2	4	21	5	4	sw.	S. A. Maxwell.	
Morrisonville.....	Christian.....	638	43.5	+ 0.7	72	10	20	15	31	1.73	- 0.35	0.74	T.	5	19	5	6	sw.	J. D. Lewis.	
Mount Vernon.....	Jefferson.....	511	43.7	- 1.5	76	11	18	26	37	2.46	- 0.44	1.25	0	3	21	2	7	n.	Theodore P. Stelle.	
Nashville.....	Washington.....	503	.....	.....	.....	.....	.....	.....	.....	1.66	- 1.14	0.73	0	5	.....	.....	.....	.....	H. M. Potter.	
Oregon.....	Ogle.....	702	40.2	.....	71	11	14	28	38	1.48	.....	1.24	0.5	4	11	5	14	s.	Samuel Ray.	
Ottawa.....	La Salle.....	500	42.8	+ 3.7	71	11	19	28	31	2.02	- 0.34	1.21	T.	4	14	3	13	sw.	Miss Maude M. Harris.	
Pana.....	Christian.....	692	43.9	+ 2.0	74	11	20	28	41	1.85	- 1.71	1.10	T.	4	21	6	3	.....	Dr. G. N. Gilbert.	
Paw Paw.....	Lee.....	930	.....	.....	.....	.....	.....	.....	.....	2.20	.....	0.97	T.	5	.....	.....	.....	.....	A. C. McBride.	
Peoria.....	Peoria.....	609	41.8	+ 4.3	72	11	20	28	27	1.56	- 1.08	0.88	T.	6	10	11	9	s.	U. S. Weather Bureau.	
Pontiac.....	Livingston.....	546	42.4	+ 1.5	71	11	18	28	35	2.25	+ 0.20	0.72	T.	6	6	11	13	sw.	George Butterworth.	
Quincy.....	Adams.....	481	43.4	.....	73	10	22	25	38	2.72	.....	2.15	0	4	.....	.....	.....	.....	Fred J. Brinkoetter.	
Riley.....	McHenry.....	956	38.6	+ 4.1	68	11	16	28	32	1.24	- 0.75	0.60	.....	6	8	10	12	sw.	John West James.	
Roberts.....	Ford.....	774	.....	.....	.....	.....	.....	.....	.....	2.65	.....	0.84	T.	5	21	2	7	sw.	R. E. Bradbury.	
Rockford.....	Winnebago.....	763	40.5	+ 3.7	71	11	16	28	30	1.34	- 1.09	0.98	0.4	6	16	5	9	.....	Hosmer C. Porter.	
Rushville.....	Schuyler.....	670	43.5	+ 3.1	73	11	20	28	29	2.12										



TABLE 2.—Daily precipitation for November, 1912. District No. 5. Upper Mississippi Valley.

Stations.	Watershed.	Day of month.																														Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
North Dakota.																																
Amenia.	Red.				T.																				.02							0.02
Bottineau.	Mouse.					.13		.04																.03								0.42
Bowbells.	do.																															0.00
Cando.	Sheyenne.																					.03										0.03
Crosby.	Mouse.				.11																		.01									0.11
Devils Lake.	Sheyenne.				.07																		T.	T.			.01					0.09
Donnybrook.	Mouse.				.10			T.															T.									0.10
Dunseith.	do.				.04			.02															T.									0.06
Edmore.	Sheyenne.																															
Fessenden.	Wells.																															
Forman.	Sheyenne.							T.																.10								0.11
Grafton.	Red.				.04																						.04					0.08
Granville.	Mouse.																															0.01
Hannah.	Pembina.																						.01		.10							0.10
Hansboro.	Red.				T.																			.03				.04				0.07
Hillsboro.	do.							.02																T.								0.02
Lakota.	Sheyenne.				.04						T.												.02			.01						0.07
Langdon.	Pembina.																															
Larimore.	Red.				.04																											0.10
Lisbon.	Sheyenne.																							.02		.03	.01					
McKinney.	Mouse.											T.																				T.
McLeod.	Sheyenne.																															0.00
Manfred.	do.				.10						T.													.10		T.						0.20
Mayville.	Red.				T.																				T.							0.02
Milnor.	do.							T.															T.	T.								T.
M'not.	Mouse.						.05																T.	T.								0.05
Minto.	Red.				.07																											0.07
Oriska.	Sheyenne.											T.																				T.
Park River.	Red.				.01																											0.01
Pembina.	do.	.20			.10			.12	.12	.12				.04																		0.70
Power.	Sheyenne.				.03																											0.03
Towner.	Mouse.				.10																											0.10
University.	Red.				.04			.01			T.													.04								0.10
Wahpeton.	do.							T.																T.			.01					T.
Walhalla.	Pembina.				T.									T.																		T.
Westhope.	Mouse.				.05																			.02								0.07
Willow City.	do.				.10			T.																T.								0.10
Minnesota.																																
Albert Lea.	Mississippi.	T.											1.10																			1.10
Angus.	Red.				.05			T.															.02				.05					0.12
Bagley.	do.				.20			.12															.05				.03	.02				0.42
Baudette.	Rainy.																															0.05
Beardsley.	Minnesota.																															0.32
Bemidji.	Mississippi.		.05					.08																								T.
Bird Island.	Minnesota.																															0.21
Brainerd.	Mississippi.																															0.50
Caledonia.	do.																															0.22
Campbell.	Red.								.02																							0.22
Cass Lake.	Mississippi.				T.			T.	.31																							1.57
Collegeville.	do.				T.			T.																								0.10
Crookston.	Red.				.03			T.																								0.08
Detroit.	do.				T.																											0.20
Ely.	Rainy.	T.			.04		T.	.06	T.	T.																						0.19
Fairmont (near).	Minnesota.													.40																		0.40
Faribault.	Mississippi.																															0.48
Farmington.	do.													.48																		0.28
Fergus Falls.	Red.							.03																								0.25
Fort Ripley.	Mississippi.																															0.32
Fosston.	Red.						T.	.10	.05																							0.00
Glencoe.	Mississippi.																															1.97
Grand Meadow.	do.	T.												1.90	.07																	0.23
Gull Lake Dam.	do.							.02																								0.07
Hallock.	Red.				.07																											T.
Halstad.	do.																															0.25
Hinckley.	St. Croix.																															0.27
International Falls.	Rainy.				.05																											0.04
Itasca State Park.	Mississippi.																															0.48
Lake Crystal.	Minnesota.													.48																		0.53
Leach Lake Dam.	Mississippi.				.13			.22																								0.34
Littlefork.	Rainy.							.16																								0.10
Long Prairie.	Mississippi.																															T.
Lynd.	Minnesota.						T.																									0.48
Mankato.	do.													.49																		0.10
Millaca.	Mississippi.																															0.08
Milan.	Minnesota.																															0.01
Minneapolis.	Mississippi.	T.				T.		T.																								0.05
Montevideo.	Minnesota.																															0.20
Moorhead.	Red.					T.		.01																								0.12
Mora.	St. Croix.																															T.
Morris.	Minnesota.																															1.17
New London.	Mississippi.																															0.01
New Richland.	Minnesota.																															



Stations.	Watershed.	Day of month.																														Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
<b>Minnesota—Contd.</b>																																
State Sanatorium.	Mississippi.					.10				.14													T.		.18		.04					0.46
Stillwater.	St. Croix.									T.													T.		.07							0.07
Taylor's Falls.	do.					.10																										0.10
Thief River Falls.	Red.																															
Tracy.	Minnesota.																															0.55
Warren.	Red.																						T.		.05							0.60
Warroad.	Rainy.	.50											T.	.60																		0.74
Winnabago.	Minnesota.	T.				.12			.36																.18	.08						0.73
Winniboshish.	Mississippi.										T.	.71	T.											.02	T.	T.	T.	T.			0.15	
Winona.	do.	T.											.15																			1.35
Worthington.	Des Moines.																															
Zumbrota.	Mississippi.	T.											1.35											T.		T.	T.	T.				
<b>South Dakota.</b>																																
Milbank   .	Minnesota.																								T.	.28		T.			0.28	
Sisseton   .	do.																								.04							0.04
<b>Wisconsin.</b>																																
Antigo.	Wisconsin.			.03					T.			.22	.20												.20		.15					.90
Barron.	Chippewa.	T.			*	1.01						* 1.00	.05												.05		.10					.10
Beloit.	Rock.							.07				T.													T.	.02	T.	.11	.03			2.11
Big St. Ger. Dam.	Wisconsin.	T.				.82						.33	.78												T.	T.	T.	T.				.23
Brodhead.	Rock.											1.05	.36	.02											T.	T.	T.	T.				1.93
Burnett.	do.				T.			T.	.01			.31	.09												T.	T.	T.	T.				1.43
Cornell.	Chippewa.											.42	.30	.02											.02	.08	T.	T.				.41
Cottage Grove.	Rock.	T.				.27						.70	.50												T.		T.	T.				1.11
Darlington.	do.							.18				T.															.23	T.				1.20
Deerskin Dam.	Wisconsin.	T.	T.		T.	*	1.70					*	1.00	.05				T.								.07		T.</				



TABLE 2.—Daily precipitation for November, 1912. District No. 5—Continued.

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Iowa—Continued.																																	
Carroll	Raccoon													.91																		0.91	
Cedar Rapids	Cedar					.62								.74																		1.36	
Charles City	do.	T.												.64																		0.64	
Clear Lake	do.													.60																		0.60	
Clinton	Mississippi	T.				.25								.38	.43									T.								1.06	
Columbus Junction	Iowa				T.	.68								.46	.38									T.	T.							1.46	
Davenport	Mississippi	T.			T.	.47	.15							.19	.17									T.	T.							0.98	
Decorah	do.													.75																		0.77	
Delaware	do.													.84														T.				0.85	
Des Moines	Des Moines	T.				.01								1.08										.02								1.11	
Dubuque	Mississippi	T.			T.	.15	.02							1.08	.25									T.			T.					1.51	
Earlham	Raccoon				T.									1.20	.17									T.			T.					1.37	
Elkader	Mississippi										T.	.75		.40	.02									T.								0.75	
Elma	Wapsipinicon	T.												.28	.21																	0.42	
Estherville	Des Moines													.50																		0.50	
Fairfield	Skunk				.29	.20								.28																			0.98
Fayette	Mississippi	T.												.60																		0.65	
Forest City	Cedar													1.70																		1.70	
Fort Dodge	Des Moines													.12	.48																	0.60	
Fort Madison	Mississippi					T.	1.23							.30	.35									T.								1.88	
Gilman	Iowa													.63	.05																	0.68	
Grand Meadow	Mississippi											T.	.51	.03										T.					.02			0.56	
Grinnell	Iowa	T.				T.	.52					T.	.83																		.60	1.96	
Grundy Center	Cedar													.75	.25																	1.00	
Guthrie Center	Raccoon	T.												.53	.03																	0.56	
Hampton	Cedar												15	.50																		0.65	
Humboldt	Des Moines													.71																		0.71	
Independence	Wapsipinicon													1.37	.28									T.								1.65	
Indianola	Des Moines	T.			.29									1.39	.06																	1.74	
Iowa City	Iowa					.58								.53																		1.11	
Iowa Falls	do.	T.												.14	.56																	0.70	
Jefferson	Raccoon													.40																		T.	1.81
Keokuk	Mississippi				1.13	.38								.20	.10																	1.48	
Kossauqua	Des Moines	.03				.83		T.						.32																		0.87	
Knoxville	do.				.40	.15								.73	.42																	1.55	
Lacona	do.	T.			.22	.16			T.					.32																		0.87	
Le Claire	Mississippi	.05				.55		T.						.05	.70																	1.27	
Marshalltown	Iowa	T.	T.											.62																	.01	0.73	
Mason City	Cedar													.62																		0.62	
Monroe	Skunk	T.				T.	.28							.44																		0.76	
Mount Pleasant	do.	T.				.69								.30	.50																	1.49	
Muscataine	Mississippi	.02				.58								.80	.72																	1.32	
New Hampton	Wapsipinicon													.62																		0.80	
Nora Springs	do.													.80																		0.62	
Northwood	Cedar	T.												1.80																		1.80	
Olin	Wapsipinicon	T.			1.00									1.03	.30																	2.33	
Osage	Cedar													.75	T.																	0.75	
Oskaloosa	Des Moines				.35	.11								.75																		1.23	
Ottumwa	do.				.10									.75																		0.10	
Pella	do.	T.				T.	.65							.35																		1.02	
Perry	Raccoon													.49	.03																	0.52	
Plover	Des Moines													1.35																		1.35	
Pocahontas	do.													.60																		0.60	
Rockwell City	Raccoon													1.02	T.																	1.02	
Sac City	do.													.90	.04																	1.18	
St. Charles	Des Moines					.24								.42	.07																	1.41	
Sigourney	Skunk				.92									.27	.29																	1.24	
Stockport	do.	T.				T.	.58							2.38																		2.38	
Storm Lake	Raccoon				.03	.33								.07	.53																	0.96	
Tipton	Cedar					.01								.55	.23																	0.79	
Toledo	Iowa					T.	.22							.52																		1.02	
Wapello	do.						.50							.01	.96																	0.97	
Washington	Skunk													.87	.08																	0.96	
Waterloo	Cedar													.83																		0.83	
Waukeg	Raccoon	T.												.73																		0.73	
Waverly	Cedar													1.58																		1.58	
Webster City	Des Moines													.85																		0.85	
West Bend	do.													1.12	.12																	1.39	
Whitten	Iowa																															T.	1.39
Winterset	Des Moines	T.				.15								1.12	.12																	T.	1.39
Missouri.																																	
Gorin	Mississippi	.16				.98								.21	.52																	1.87	
Hannibal	do.	.01				2.00	.11							.04																		T.	2.16
Louisiana	do.	.35				1.00	.65							.06																		2.06	
Mexico	do.	.41				.12	.07							T.																		2.21	
Palmyra	do.					1.66	.52							.05																		2.18	
Steffenville	do.	.30				1.40	.70							.05																		2.45	
Sublett	do.	.01				.05								.05																		0.11	
Vandalia	do.	.20				2.12																											



TABLE 2.—Daily precipitation for November, 1912. District No. 5—Continued.

Stations.	Watershed.	Day of month.																														Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Illinois—Continued.																																
Calro.....	Mississippi.....				T.	.01	.35						.26	T.																	0.62	
Carbondale.....	do.....	.33			.03		1.37						.02	.15																	1.90	
Carlinville.....	Illinois.....	.40	T.			1.35	.50							.81	T.																3.06	
Carlyle.....	Mississippi.....																															
Chester   .	do.....	2.18			.18	.06	.74	.08						.12																	3.36	
Clinton.....	Illinois.....	.81				1.14	.82	.07					T.	1.16											T.						4.00	
Coatsburg.....	Mississippi.....	.27				1.00	.79																								2.06	
Cobden.....	do.....	.87			T.		1.46						.32																		2.65	
Dakota.....	do.....	T.				.11	.42						.09	.80										T.	T.			T.	T.		1.42	
Decatur.....	Illinois.....	.15				1.05	.69						.20												T.						2.09	
Dixon   .	Mississippi.....	.20					.28	T.						.85												.05					1.38	
Du Quoin.....	do.....				.05		1.30						T.	.19																	1.54	
Dwight.....	Illinois.....	.51				.26	.83						.01	.53		.24										.02				T.		2.16
East St. Louis.....	Mississippi.....	1.41					1.36	.02																							3.03	
Edwardsville.....	do.....	.20				1.22							.40																		1.82	
Elgin.....	Illinois.....	.20					.84						.03	.77											T.						1.84	
Ewing.....	Mississippi.....																															
Fairview.....	Illinois.....	.24				.17	.91						.32	.15															T.	T.		1.79
Galva.....	do.....	.14				.04	1.11						.54	.34											T.			T.	T.		2.17	
Grafton.....	Mississippi.....	.52					1.80	.06						.32																	2.70	
Greenville.....	do.....	.25				.85	.25							.43																	1.78	
Grigsbyville.....	do.....	.25				.70	.25						.25																		1.45	
Havana.....	do.....	.20				.75	.48						.07																		1.50	
Henry.....	do.....	.23				.06	1.15						.09	.68														T.			2.21	
Hillsboro.....	do.....	.35				.65	.40						.45																		1.85	
Joliet.....	Illinois.....	.20				.17	.89						.08	.30											T.	.03			T.		T.	1.67
Kishwaukee.....	Mississippi.....	T.				T.	.25						.17	.80											T.	.01			T.		1.23	
La Grange.....	Illinois.....	T.					1.20						T.	.22																	1.48	
La Harpe.....	do.....	.15				.70	.89						.17	.15																	2.06	
Lanark.....	Mississippi.....	T.				.21	.31						.66	.60											T.	T.		T.	T.		1.78	
La Salle.....	Illinois.....	.01				.38	.68						.26	.21											T.	T.		T.	T.		1.54	
Lincoln.....	do.....	.39				.75	.60						T.	.58											T.	T.		T.			2.32	
Loami.....	do.....	.36				T.	.75	.28					T.	.40																	1.79	
Macomb.....	do.....	.14				.41							.01	.06																	0.62	
Manteno.....	do.....	.67				.27	1.31	.02					.51																		2.99	
Martinton.....	do.....	.60				.60	.65						.25																		2.15	
Mascoutah.....	Mississippi.....	.45				.48							.27																		1.20	
Minonk.....	Illinois.....																															
Monmouth.....	Mississippi.....	.10				.15	.80						.75	.18																	1.98	
Morris.....	Illinois.....	.35	.02				1.04							.50													.02					1.93
Morrison.....	Mississippi.....	T.				T.	.30						.16	.77													.02				1.25	
Morrisonville.....	Illinois.....	.46	T.			.74	.31	.01					.21																		1.73	
Mount Vernon   .	Mississippi.....	1.03				T.	1.25						.18																		2.46	
Nashville.....	do.....	.40				T.	.50	T.						.73	.01																1.66	
Oregon.....	do.....	T.					.20						.27	.97																	1.48	
Ottawa.....	Illinois.....	T.				.29	1.21						.07	.45											T.	T.					2.02	
Pana.....	Mississippi.....	.20				1.10	.30						T.	.25																	1.85	
Paw Paw.....	Illinois.....	.12					.97						.17	.92											T.	.02					2.20	
Peoria.....	do.....	.06				.71	.26						.49	.03																	.01	
Pontiac.....	do.....	.51				.49	.72	.06					.09	.38																	2.25	
Quincy.....	Mississippi.....	.39					2.15	.12					.06																		2.72	
Riley.....	do.....	.02				T.	.56						.20	.40	.02																1.24	
Roberts.....	Illinois.....	.42				.84	.82						.02	.55											T.	T.					2.65	
Rockford.....	Mississippi.....	T.				.01	.32						.18	.80											T.	.03					1.34	
Rushville.....	Illinois.....	T.				.87	.84						.41																		2.12	
St. Charles.....	do.....	.29					1.00						.09	.58																	2.00	
St. Peter.....	Mississippi.....	.30				T.	.20	.25						.38											T.						1.13	
Sparta.....	do.....					T.	.02	.53						.46																	1.01	
Springfield.....	Illinois.....	.01				T.	1.02	.09					.36	T.											T.						T.	1.48
Streator   .	do.....	.83	T.				.73	.44						.54																	2.55	
Sullivan.....	Mississippi.....	.27				1.10	.24							.31																	1.92	
Sycamore.....	do.....					T.	.38						.36	.38																	1.12	
Tiskilwa.....	Illinois.....	.18				T.	1.50						.10	.55											T.	.03					2.39	
Walnut.....	Mississippi.....	.04				T.	.73						.32	1.08												.01					2.18	
Warsaw.....	do.....						1.41							.40																	1.81	
Waterloo.....	do.....	.32				.61	.29						.05	.17																	1.44	
White Hall.....	Illinois.....	.18				.77	.44						.10	.09											T.	T.					1.58	
Windsor.....	Mississippi.....	.10				.98	.29							.20																		

\* Precipitation included in that of the next measurement.

† Separate dates of falls not recorded.

|| Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.



TABLE 3.—Maximum and minimum temperatures at selected stations for November, 1912. District No. 5.

Date.	North Dakota.								Minnesota.																	
	Bottineau. §§		Devils Lake.		Minot. §§		Pembina. §§		Collegeville.		Crookston. §§		Grand Meadow.		Montevideo. §§		Moorhead.		New Ulm. §§		Pine River Dam.		St. Paul.		Winnibigoshish.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	30	23	30	17	33	23	32	20	32	25	29	21	41	20	60	17	28	17	39	27	35	17	34	23	38	22
2.....	33	11	37	8	40	17	36	22	40	16	37	18	45	13	58	32	42	14	49	16	37	20	44	20	37	20
3.....	44	14	38	22	45	19	32	20	54	26	45	28	54	26	50	34	54	24	52	16	50	15	56	29	48	22
4.....	34	21	32	21	36	22	30	18	52	38	34	29	55	37	56	30	39	27	55	33	50	25	56	41	44	22
5.....	30	24	28	28	34	22	32	20	49	28	37	28	60	32	65	23	37	23	50	35	44	20	54	34	38	30
6.....	42	23	.....	.....	44	28	38	22	54	25	47	28	56	24	65	36	55	26	49	24	49	19	55	30	48	26
7.....	39	23	.....	.....	38	30	42	24	54	41	50	32	57	29	64	35	55	30	63	24	54	34	59	35	55	32
8.....	43	13	.....	.....	41	25	40	26	47	32	40	32	50	32	51	34	46	24	48	35	50	15	45	34	58	28
9.....	40	23	.....	.....	50	25	42	28	56	30	47	28	55	22	61	36	53	24	56	24	49	28	58	25	48	24
10.....	42	24	.....	.....	35	26	44	26	60	36	51	32	62	33	74	35	64	31	67	29	61	29	60	39	55	32
11.....	33	25	.....	.....	33	25	42	28	55	36	40	29	58	46	49	33	40	28	53	38	50	28	51	40	60	31
12.....	30	24	.....	.....	46	25	38	26	36	30	32	27	49	33	39	30	34	19	39	27	40	28	41	33	44	30
13.....	32	20	.....	.....	31	24	34	24	36	23	33	20	38	30	34	14	32	16	38	18	44	30	37	31	35	22
14.....	37	27	.....	.....	46	26	32	20	40	18	33	27	41	22	40	29	32	24	43	19	34	9	40	22	38	15
15.....	40	25	.....	.....	45	25	34	18	41	21	35	25	44	21	45	23	34	24	45	22	36	9	45	25	42	18
16.....	42	21	.....	.....	43	24	38	16	42	27	37	26	45	28	48	30	44	26	46	21	40	27	43	31	40	24
17.....	47	20	.....	.....	54	24	34	18	49	28	42	23	51	26	57	26	48	23	57	25	48	17	50	28	45	25
18.....	50	23	.....	.....	53	26	32	15	57	30	55	28	55	27	67	27	57	24	62	25	54	15	56	28	56	24
19.....	46	24	47	.....	48	30	34	10	59	33	50	23	59	30	66	29	59	22	65	27	55	24	58	35	57	30
20.....	39	24	40	31	41	33	36	12	54	35	47	32	54	33	59	30	50	28	67	29	52	22	55	38	52	28
21.....	44	18	41	26	45	27	32	10	47	27	43	26	46	28	53	25	45	23	52	28	47	20	46	31	45	30
22.....	36	21	36	25	40	28	24	12	46	30	37	27	48	26	52	25	40	25	51	26	42	22	45	31	40	29
23.....	22	18	25	15	32	20	28	16	41	23	25	23	43	24	34	26	29	17	32	26	34	21	38	24	42	25
24.....	28	7	30	17	36	11	30	10	32	19	28	21	35	21	33	25	26	20	30	18	32	20	34	22	43	28
25.....	24	15	31	18	40	20	32	12	32	18	34	21	34	16	36	20	36	24	30	18	30	9	31	19	34	20
26.....	28	10	27	14	35	18	24	12	28	16	28	19	33	18	34	16	29	17	30	19	31	21	29	20	32	15
27.....	36	8	24	10	42	16	22	8	28	18	25	15	28	11	32	15	26	18	29	17	30	17	25	14	15	12
28.....	38	11	37	24	40	17	20	6	41	16	39	18	38	9	45	18	44	21	43	16	34	4	39	13	36	9
29.....	35	16	34	19	40	20	22	5	39	24	35	25	45	25	40	24	40	22	47	24	32	22	41	27	35	20
30.....	31	16	34	24	25	17	12	4	46	24	43	23	47	20	42	23	46	24	51	21	42	15	49	23	41	18
Mns....	36.8	19.1	33.9	19.9	40.7	23.1	31.9	16.9	44.9	26.4	38.6	25.1	47.5	25.4	50.5	26.3	42.1	22.8	47.9	24.2	42.9	20.1	45.8	28.2	43.4	23.7

Date.	Wisconsin.								Iowa.																	
	Eau Claire.		Hancock.		La Crosse.		Madison.		Prentice.		Wausau.		Algona.		Cedar Rapids.		Charles City.		Davenport.		Des Moines.		Dubuque.		Keokuk.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	37	26	40	23	36	21	35	24	38	22	36	25	36	22	37	35	35	18	40	27	36	26	38	27	40	31
2.....	39	17	37	15	42	18	36	20	33	10	36	17	51	15	44	20	47	16	42	22	50	31	41	21	45	23
3.....	57	20	52	18	55	28	49	27	50	18	50	23	57	29	57	20	53	28	54	32	59	33	53	30	55	31
4.....	54	41	52	36	56	40	51	36	50	27	48	32	58	39	56	30	57	37	59	42	61	42	55	41	62	44
5.....	56	30	53	35	59	35	55	38	48	30	54	32	58	38	56	40	58	36	56	43	60	42	55	40	56	50
6.....	52	22	55	34	52	31	48	40	49	19	51	28	55	25	54	41	55	30	53	38	58	38	54	35	56	38
7.....	53	25	48	28	55	28	50	29	50	25	49	25	60	36	57	30	59	30	56	31	62	36	54	29	60	33
8.....	48	37	46	35	49	35	49	38	50	26	45	36	54	34	54	31	52	28	56	38	58	40	52	40	59	43
9.....	48	27	41	26	52	26	45	31	40	24	40	27	61	24	55	28	57	23	57	32	64	33	52	32	61	35
10.....	62	35	61	34	62	36	60	38	61	31	56	32	66	37	68	29	65	36	68	49	70	50	66	40	73	52
11.....	57	40	64	45	65	50	64	48	61	32	58	42	38	44	69	43	62	42	71	54	66	54	68	52	74	57
12.....	50	33	60	37	53	37	59	38	54	35	54	36	45	34	62	50	48	30	67	44	62	36	62	42	73	49
13.....	39	32	37	33	40	32	38	33	38	29	39	32	43	25	41	38	39	30	44	36	50	33	42	34	49	39
14.....	41	23	39	26	41	25	40	29	40	11	36	26	37	26	42	30	41	24	45	30	42	31	43	28	45	33
15.....	44	17	44	18	45	21	42	27	40	29	41	16	45	21	46	24	45	21	47	27	50	27	46	23	50	26
16.....	45	32	44	31	46	36	45	32	41	26	39	30	47	30	47	24	46	28	49	34	50	36	48	35	50	32
17.....	50	22	48	24	53	25	48	29	44	20	46	23	52	25	51	27	54	23	52	28	54	29	51	28	53	28
18.....	54	23	52	24	55	28	53	32	48	26	49	25	55	40	55	27	56	27	58	35	61	35	56	31	62	36
19.....	55	28	54	31	60	30	58	39	54	28	54	27	57	31	59	29	61	28	61	37	62	32	62	33	63	40
20.....	54	29	55	33	57	35	55	36	55	34	54	32	55	32	66	33	58	34	67	41	65	41	64	36	70	46
21.....	45	32	48	33	48	34	49	37	55	32	49	34	49	28	48	35	48	31	53	35	52	36	49	37	54	38
22.....	46	32	52	32	50	31	52	3																		



TABLE 3.—Maximum and minimum temperatures for November, 1912. District No. 5—Continued.

Date.	Hannibal, Mo.		Laporte, Ind.		Illinois.															
					Cairo.		Greenville.		La Salle.		Monmouth.		Mount Vernon. §§		Peoria.		Springfield.		Winnebago.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	42	34	41	32	47	41	46	35	40	30	43	31	46	36	40	33	42	34	40	26
2.....	47	25	33	28	45	32	45	24	37	24	40	20	43	28	39	23	40	27	39	19
3.....	57	31	46	20	52	33	55	25	51	30	53	24	54	24	53	29	51	29	42	26
4.....	66	46	53	34	62	42	62	25	61	40	62	39	60	34	63	40	65	40	55	37
5.....	57	48	58	39	65	55	57	46	56	43	54	47	68	42	55	44	56	45	55	36
6.....	56	36	55	40	64	53	57	49	55	36	54	41	62	42	55	38	56	42	53	34
7.....	59	31	55	38	61	46	59	33	55	32	54	29	58	40	55	29	54	36	50	28
8.....	61	40	52	34	67	43	64	38	55	41	54	39	65	37	57	37	58	41	46	32
9.....	62	31	49	36	63	40	62	33	51	33	57	26	62	33	54	29	56	36	53	25
10.....	75	54	65	38	75	48	75	45	68	45	70	47	70	33	71	46	72	48	66	40
11.....	75	57	70	43	73	54	74	50	70	53	72	49	76	45	72	52	73	52	76	50
12.....	73	47	65	41	70	54	70	54	67	52	69	44	67	50	68	51	69	49	64	44
13.....	52	38	60	35	54	44	66	39	52	36	54	37	48	44	51	38	49	39	44	32
14.....	45	26	56	29	50	39	47	33	43	30	45	30	45	32	44	29	44	34	42	28
15.....	51	23	42	24	50	32	52	26	45	25	48	21	51	23	46	23	46	28	43	22
16.....	50	34	41	36	58	36	56	29	46	31	53	32	58	23	48	31	45	32	42	29
17.....	54	27	46	24	53	36	53	28	49	29	51	36	52	28	50	26	51	30	48	26
18.....	61	34	50	30	59	33	60	29	56	33	59	32	59	24	57	30	56	32	54	28
19.....	63	40	60	32	69	43	65	36	61	37	61	36	63	26	60	36	60	39	61	30
20.....	68	47	61	30	68	46	69	39	65	38	67	37	67	30	67	40	67	42	61	36
21.....	54	34	58	36	65	44	64	39	54	35	56	36	70	34	53	32	54	39	56	35
22.....	58	40	52	25	60	42	59	31	52	34	54	31	58	31	54	29	56	31	53	30
23.....	50	30	42	33	53	39	48	37	47	27	47	34	50	32	43	31	45	31	44	31
24.....	38	25	37	26	40	31	40	26	37	26	39	25	39	26	38	26	38	26	35	25
25.....	41	21	37	25	42	28	38	22	36	26	35	21	38	23	36	22	37	23	34	23
26.....	43	29	36	30	48	32	45	27	35	28	40	24	42	18	39	26	41	29	34	23
27.....	37	24	33	23	43	31	36	24	34	23	35	25	45	22	34	23	34	25	32	23
28.....	48	23	35	20	45	26	45	20	42	19	45	17	48	28	43	20	43	22	39	13
29.....	50	29	42	30	55	32	53	30	48	29	50	30	53	32	48	30	47	32	47	27
30.....	53	25	48	20	55	46	48	30	50	24	47	22	50	34	49	24	51	30	49	23
Means.....	54.9	34.0	49.3	31.0	57.0	40.0	55.7	33.4	50.6	33.0	52.3	32.1	55.6	31.8	51.4	32.2	51.9	34.8	48.6	29.4

a, b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.



## CLIMATOLOGICAL DATA FOR NOVEMBER, 1912.

## DISTRICT No. 6, MISSOURI VALLEY.

MONTROSE W. HAYES, District Editor.

## GENERAL SUMMARY.

Dry and warm weather prevailed in all parts of the district. There was almost an entire absence of the rain and snow storms, followed or accompanied by abrupt temperature changes, that are usual during this season of transitory weather conditions, and in every State of the drainage area mild, sunshiny weather made the month appear more like October than November. All out door pursuits progressed favorably. In the corn-growing sections the large crop was gathered under almost ideal conditions and at the end of the month most of it had been cribbed. Late thrashing in the Dakotas, which had been delayed locally by occasional rains in October, was brought to a close. In the grazing regions cattle fed on the range and a material saving in garnered stock-feed was effected. Among the few storms the most noteworthy were a thunderstorm at Clarinda, Iowa, on the 5th and a windstorm at Helena, Mont., on the morning of the 22d, when the wind attained a velocity of 70 miles per hour, which is by 10 miles the highest velocity on record at that station. Considerable damage was done to plate-glass windows and to buildings in course of construction.

## TEMPERATURE.

The excess in temperature was general. It was greatest in Nebraska, the Dakotas, and Montana, where the mean daily departure was  $6^{\circ}$  to  $8^{\circ}$  above the normal. In the remainder of the district the average daily excess ranged from about  $1^{\circ}$  to  $5^{\circ}$ . The 9th and 10th were the days that were warmest throughout the district, but in North Dakota and the Mountain States the 17th, 18th, and 19th formed a period that was just about as warm as the earlier one. The lowest temperatures of the month occurred at a large majority of the stations between the 24th and the 27th.

On October 31 there was, for the first 10 months of the year, a temperature deficiency in all parts of the district. In November this was reduced considerably, and in eastern South Dakota there is now a slight excess. In Colorado and Wyoming, where the November weather was not quite so warm, comparatively, as in the other States

of the drainage area, an average daily deficiency, since January 1, of about  $2^{\circ}$  still exists.

## PRECIPITATION.

The 11th-12th formed the only period of general precipitation, but in the Mountain States there was scattered precipitation during the early days of the month and after the 24th; and in Missouri there was rain at almost all stations on the 5th-6th. The greatest amounts for the month occurred in the southern third of the district, or in the territory lying to the south of a line drawn east and west through Omaha, Nebr. In this region there were a few localities with somewhat more than the normal fall. In the northern two-thirds of the district unusually dry weather prevailed, and in Nebraska and the Dakotas numerous stations had no precipitation at all. The snowfall was light. East of the foothills the amounts were quite scattered and were hardly more than flurries. In the mountains there was more rain than is usual in November. In Montana there was hardly any snow on the ground, even in the higher mountains, at the close of the month, and in Wyoming and Colorado the depth was less than the normal.

The regions of excess and deficiency in precipitation since January 1 are substantially the same that they were on October 31. The excesses, however, which prevailed in the mountain and foothill country and along the eastern edge of the district, are not as great as they were a month ago, and the deficiencies in the territory between the regions of excess, or between the Missouri River and the foothills, have been increased. At St. Louis the total precipitation for the 11 months is 9.09 inches above the normal; at all of the other stations the departures, both excesses and deficiencies, are quite moderate.

## RIVERS.

The river stages declined gradually, but were not especially low, even at the close of the month. The Missouri River in the Dakotas usually freezes over in November, but it was still open on the 30th, although ice was running during the last few days of the month.



TABLE 1.—Climatological data for November, 1912. District No. 6, Missouri Valley.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.			Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.			Number of partly cloudy days.	Number of cloudy days.
Wyoming.																				
Arapahoe	Fremont		2																Edw. L. Seymore.	
Barnum	Johnson	5,500	7																Thos. Freeguard.	
Basin	Bighorn	3,862	13	40.2	+ 4.1	67	6	12	27	40	0.00	- 0.13	0.00	0.0	0	23	5	2	s.	O. J. Robertson.
Bennett	Carbon		3																Chas. C. Young.	
Big Creek Station	do.	7,500	1	27.7		56 <sup>a</sup>	9	- 7	27	50 <sup>a</sup>	0.34		0.32	3.3	2	3 <sup>a</sup>	12 <sup>a</sup>	3 <sup>a</sup>	sw.	U. S. Forest Service.
Burns	Laramie	5,400	2	37.4		69	8	2	26	39	1.13		1.10	4.2	3	13	16	1	sw.	E. W. Bastian.
Casper	Natrona	5,101	3	43.3		78	22	10	26	52	0.21		0.07	0.7	6	14	6	10	sw.	M. C. Cook.
Centennial	Albany	8,074	9	33.8		56	9	0	27	38	0.33		0.20	3.4	5	12	5	13	w.	Louis A. Gregory.
Cheyenne	Laramie	6,088	41	38.5	+ 3.6	65	9	5	27	35	0.58	+ 0.17	0.50	3.2	2	11	12	7	nw.	U. S. Weather Bureau.
Chugwater	do.	5,282	11	39.0	+ 2.7	71 <sup>b</sup>	10	- 2 <sup>b</sup>	27	46 <sup>b</sup>	0.70	+ 0.16	0.50	5.0	2	5 <sup>b</sup>	21 <sup>b</sup>	2 <sup>b</sup>	w.	A. H. Woolever.
Clark	Park	4,320	7	42.0		62	9	14	27	33	0.05		0.05	T.	1	8	16	6	w.	Chas. A. C. Snow.
Cody	do.	5,000	5	39.4		63	9	7	27	43	0.06		0.04	0.4	2	10	13	7	w.	D. A. Tinkom.
Crazy Creek	do.	6,828	1	27.4		50	9	- 6	27	41	0.76		0.30	6.0	8	17	1	12	w.	Jas. Smith.
Dome Lake	Sheridan	8,821	4	28.6		50	17	- 1	27	35	1.69		0.50	16.0	6	10	15	5	sw.	Abe Mills.
Douglas	Converse	4,793	3	38.0		67	10	- 3	27	49	0.39		0.39	T.	1				nw.	Henry C. Miller.
Dubois	Fremont	6,909	5	33.1		55	9	3	1	43	0.05		0.05	0.5	1	7	19	4	nw.	Dr. F. H. Welty.
Eatons Ranch	Sheridan	4,600	7	42.1		70 <sup>b</sup>	9	7 <sup>b</sup>	27	48 <sup>b</sup>	0.65		0.20	6.5	3	18 <sup>b</sup>	10 <sup>b</sup>	0 <sup>b</sup>	w.	F. A. Eaton.
Echeta	Crook	4,200	3								T.		T.	T.	0	10	20	0	s.	M. R. Hunter.
Elk Mountain	Carbon		7								0.35		0.31	7.0	2				sw.	Wm. Richardson.
Encampment	do.	7,322	3	33.2		53 <sup>i</sup>	9	- 3 <sup>i</sup>	27	42 <sup>i</sup>	0.27		0.15	2.2	6	21 <sup>i</sup>	17 <sup>i</sup>	21 <sup>i</sup>	sw.	U. S. Forest Service.
Ervay	Natrona	6,400	3	34.0		58	10	1	27	34	0.26		0.16	4.0	3	11	13	6	sw.	Frank Jameson.
Fort Laramie	Laramie	4,270	34	38.8	+ 3.9	74	10	0	27	59	0.60	+ 0.26	0.50	3.0	2	19	10	1	w.	John Hunton.
Foxpark	Albany	9,015	2	20.6		50	9	- 19	27	50	0.57		0.44	6.7	6	6	14	10	sw.	U. S. Forest Service.
Germania	Bighorn	4,312		34.2		64	11	9	27	39	0.00		0.00	0.0	0	19	3	8	se.	J. W. Peper.
Gillette	Crook	4,546	6	36.6		62	9	9	27	30	0.20		0.15	2.0	2	17	9	4	sw.	S. D. Perry.
Horse Creek	Fremont			26.2		48	17	- 5	27	41	0.21		0.09	4.5	4	14	8	8	w.	U. S. Forest Service.
Hunters Station	Johnson	8,000	6	33.2		60	17	4	26	42	0.23		0.23	3.0	1	20	8	2	w.	Do.
Hyattville	Bighorn	4,632	13	38.2	+ 2.0	67	9	9	27	35	0.00		0.00	0.0	0	17	9	4	w.	Wm. Booth.
Jireh	Converse	5,050	2								0.64		0.48	3.0	4	14	14	2	sw.	P. L. Ford.
Kirtley	do.		8	38.2		69	17	1	26	44	0.32		0.27	1.2	2	15	9	6	s.	D. M. Zumbrunnen.
Kirwin	Park	9,187	3								0.11		0.06	0.5	3	7 <sup>i</sup>	8 <sup>i</sup>	3 <sup>i</sup>	nw.	C. L. Tewksbury.
Knowles	Crook	4,500	3								0.11		0.06	0.5	3	7 <sup>i</sup>	8 <sup>i</sup>	3 <sup>i</sup>	nw.	Geo. A. Knowles.
Lagrange	Laramie	4,510	2	40.8		70	9	3	27	40	0.52		0.37	5.3	2	19	5	6	w.	Owen Shupp.
Lander	Fremont	5,372	20	34.2	+ 5.5	62	10	6	27	35	0.33	- 0.27	0.19	0.4	4	8	12	10	sw.	U. S. Weather Bureau.
Laramie	Albany	7,188	21	31.5	- 0.3	60	10	5	27	41	0.78	+ 0.51	0.72	5.6	3	22	4	4	sw.	University of Wyoming.
Leo	Carbon	6,878	10	32.9	+ 0.1	58 <sup>k</sup>	9	0	27	32 <sup>k</sup>	0.20	- 0.11	0.09	1.8	3	5 <sup>k</sup>	5 <sup>k</sup>	9 <sup>k</sup>	sw.	C. A. Cowdin.
Lolabama Ranch	Park	7,052	8	34.0		57	10	1	35	10	0.10		0.10	1.0	1	18	11	1	w.	Mary E. Painter.
Lovell	Bighorn	3,825	6	37.3		64	10	11	26	33	0.06		0.06	0.0	1	6	17	7	n.	R. Fred Harrison.
Lusk	Converse	5,007	21	37.4	+ 4.6	65	9	3	26	39	0.00	- 0.26	0.00	0.0	0				sw.	D. E. Goddard.
Manville	do.	5,050	2								0.70		0.48	2.0	4	8	20	2	sw.	L. C. Stoddard.
Moorcroft	Crook	4,111	8	39.0		69 <sup>d</sup>	9	6 <sup>d</sup>	27	35 <sup>d</sup>	0.11		0.10	1.1	2	12 <sup>d</sup>	13 <sup>d</sup>	1 <sup>d</sup>	sw.	C. T. McCampbell.
Moore	Albany	6,000	11	38.9	+ 2.4	68	10	1	27	42	0.36	- 0.13	0.26	5.0	3	10	11	9	w.	Edwin Moore.
Newcastle	Weston	4,319	5	37.2		65	8 <sup>e</sup>	8	27	34	0.10		0.10	1.0	1	18	9	3	w.	Dr. S. W. Johnson.
Pathfinder	Natrona	5,735	6	36.6		60	8 <sup>e</sup>	2	27	37	0.19		0.16	2.6	2	20	4	6	sw.	U. S. Reclamation Service.
Pinebluff	Laramie	5,038	9	38.2		71 <sup>f</sup>	9	5 <sup>f</sup>	27	43 <sup>f</sup>	0.75		0.48	4.0	2	16 <sup>f</sup>	2 <sup>f</sup>	1 <sup>f</sup>	nw.	C. L. Beatty.
Pine Ridge	Crook										0.06		0.04	0.7	2	15	5	10	sw.	J. E. S. Altaffer.
Powell	Park	4,376	4	37.6		62	9	10	27	32	0.00		0.00	0.0	0	15	11	4	w.	U. S. Reclamation Service.
Rawlins	Carbon	6,748	10	33.8	+ 0.7	57	9	3	27	34	0.53	- 0.06	0.33	3.7	4	19	7	4	sw.	E. J. Ehrenfeld.
Riverton	Fremont	4,960	3	33.2		64	10	0	27	43	0.00		0.00	0.0	0	21	8	1	e.	F. H. Allyn.
Rocky Point	Crook										0.02		0.02	T.	1	15	10	5	s.	P. Woxen.
Saratoga	Carbon	6,785	14	34.2	+ 2.4	62 <sup>b</sup>	9 <sup>t</sup>	- 3 <sup>t</sup>	27	29 <sup>b</sup>	0.30	- 0.27	0.30	3.0	1	19 <sup>b</sup>	3 <sup>b</sup>	6 <sup>b</sup>	w.	R. G. Hamilton.
Seven Mile Creek	do.			31.4		53 <sup>e</sup>	9 <sup>t</sup>	- 8 <sup>t</sup>	27	45 <sup>e</sup>	0.36		0.15	5.0	4	16 <sup>e</sup>	5 <sup>e</sup>	6 <sup>e</sup>	w.	U. S. Forest Service.
Sheridan	Sheridan	3,790	17	35.0	+ 2.0	55	10	3	27	37	0.49	- 0.10	0.24	3.0	6	6	13	11	se.	U. S. Weather Bureau.
Shoshone Dam	Park	5,385	6	43.8		64	9	18	27	38	0.14		0.10	1.2	3	12	15	3	w.	U. S. Reclamation Service.
Soldiers Home	Johnson	4,635	20										0.13	4.2	7	13	7	10	sw.	Joel C. Smiley.
South Pass City	Fremont	7,873	10	26.2		46	24	- 7	27	34	0.48		0.10	2.0	2	11	13	6	w.	John Sherlock.
Sundance	Crook	4,750		35.6		62	10	5	27	30	0.20		0.10	2.0	2	11	13	6	n.	Geo. W. Ashdown.
Thermopolis	Fremont	4,350	8	36.6		66	9	1 <sup>t</sup>	39	0.02			0.02	0.4	1	19	11	0	n.	A. L. Duhig.
Thornton	Weston			34.0		65	9	1	1	39	T.		T.	T.	0	17	6	7	nw.	Geo. H. Ferguson.
Ulm	Sheridan	4,448									0.29		0.10	6.0	5	16	10	4	nw.	W. H. Coleman.
Verona	do.	4,360	3								0.27		0.11	4.0	3	6	18	6	se.	O. A. Roode.
Wheatland	Laramie	4,700		41.7		71	10	7	27	40	0.44		0.25	2.0	4	16	8	6	w.	A. deF. Snively.
Wiant Ranch	Carbon	7,400	2								0.20		0.20	2.0	1	15	7	8	sw.	Ira G. Wiant.
Woodrock	Sheridan										1.33		0.64	13.4	7	14	11	5	sw.	U. S. Forest Service.
World	Bighorn		1	35.3		68	9	8	27	42	0.09		0.09	T.	1	11	19	0	nw.	Prof. B. C. Buffum.
Wynote	Laramie	4,207	5	40.4		84	9	2	27	49	0.									



TABLE 1.—Climatological data for November, 1912. District No. 6—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.					Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Montana—Continued.																				
Busteed.	Sweet Grass.	4	38.9	63	9	13	27	38	0.30	0.16	1.0	5	18	10	2	w.	T. H. Busteed.			
Cabin Creek.	Beaverhead.	13	37.9	+ 6.3	57	19	13	15	38	0.10	0.06	4.5	2	18	9	3	s.	W. J. Crowell.		
Canyon Ferry.	Lewis and Clark.	3,644	37.9	57	19	13	15	38	0.32	0.25	0	2	21	8	1	nw.	W. L. Kirk.			
Cascade.	Cascade.	3,361	43.6	62	18	13	25	41	0.06	0.04	0	2	6	20	4	sw.	Dr. E. E. James.			
Chessman Reservoir.	Lewis and Clark.	5,275	33.4	49	17	2	1	40	0.91	0.60	12.5	5	14	0	16	sw.	C. D. Schmidt.			
Chester.	Hill.	3,140	32.4	61	19	8	27	40	0.00	0.00	0	0	4	11	15	w.	E. D. Keith.			
Chinook.	Blaine.	2,502	37.2	+ 9.7	64	9	8	1	46	0.19	0.17	2	2	20	8	w.	T. O'Hanlon Co.			
Clemons.	Lewis and Clark.	4,672	36.2	60	18	5	27	44	0.22	0.17	T.	3	6	13	11	w.	Frank Eberl.			
Clydepark.	Park.	1	36.2	60	18	5	27	44	0.40	0.20	5.0	4	15	8	7	w.	Frank Taylor.			
Conrad.	Teton.	1	41.6	69	10	9	29	51	T.	T.	T.	0	18	9	3	nw.	Robert J. Kelly.			
Copper.	Meagher.	7	38.2	+ 5.5	64	9	11	1	34	0.57	0.35	6.0	2	22	5	3	w.	Orville Harris.		
Crow Agency.	Rosebud.	3,041	38.2	+ 5.5	64	9	11	1	34	0.77	0.01	0.45	1.5	3	28	0	2	s.	Harry Throssell.	
Culbertson.	Valley.	1,927	35.0	+ 9.2	70	9	9	27	45	0.20	0.14	0.20	2.0	1	20	5	5	ne.	G. H. Coulter.	
Cut Bank.	Teton.	3,700	41.2	+10.6	69	7	20	1	38	0.00	0.19	0.00	0	0	20	10	0	w.	Charles N. Thomas.	
Denton.	Fergus.	3,500	40.6	66	17	15	27	37	0.13	0.10	1.5	2	11	6	13	w.	P. J. Griesenauer.			
Dillon.	Beaverhead.	5,147	41.4	+ 7.5	66	9	11	27	45	1.02	0.09	0.80	2.0	3	15	10	5	sw.	Prof. J. E. Monroe.	
Dry Creek.	Broadwater.	5,500	2	67	17	15	27	45	1.96	0.84	12.0	5	7	10	13	sw.	J. C. Stuart.			
Dry Wolf Camp.	Cascade.	6,000	3	67	17	15	27	45	0.38	0.16	2.0	3	23	1	6	sw.	Mrs. Harriet R. Eveleth.			
Dunkirk.	Teton.	3,293	38.4	67	17	15	27	45	0.38	0.16	2.0	3	23	1	6	sw.	B. C. Prozman.			
East Gallatin River.	Gallatin.	6,000	3	67	17	15	27	45	0.38	0.16	2.0	3	23	1	6	sw.	John Eberhart.			
Elkalaka.	Custer.	11	38.0	+ 8.2	62	10	9	1	34	0.00	0.24	0	0	20	2	8	w.	William Freese.		
Elkhorn.	Jefferson.	6,576	3	67	17	15	27	45	0.77	0.34	8.0	5	10	15	5	w.	James Heagan.			
Fallon.	Custer.	2,208	35.8	58	18	9	1	32	T.	T.	0	0	24	4	2	w.	Mrs. A. C. Gifford.			
Findon.	Meagher.	6,000	36.8	55	18	13	27	34	0.36	0.27	8.1	5	13	10	7	w.	Lewis Cameron.			
Fish Creek.	Silver Bow.	8,500	28.9	42	9	10	1	24	0.39	0.23	7.0	2	15	12	3	w.	O. B. Tilton.			
Flathead Creek.	Gallatin.	6,000	1	37.0	70	22	6	27	40	0.67	0.38	2.4	5	9	4	17	nw.	Alta Williams.		
Forsyth.	Rosebud.	2,514	5	38.4	70	9	10	27	41	0.55	0.35	0.2	2	16	11	3	w.	H. Mackenzie.		
Fort Benton.	Chouteau.	2,630	32	41.0	+ 7.9	68	17	12	26	33	T.	0.50	T.	0	18	11	1	sw.	Jere Sullivan.	
Fort Harrison.	Lewis and Clark.	4,004	8	42.3	+ 8.6	61	23	11	26	37	0.01	0.41	0.01	T.	1	20	6	4	s.	Post Hospital.
Fort Shaw.	Cascade.	3,500	23	42.3	+ 8.6	61	23	11	26	37	0.01	0.41	0.01	T.	1	20	6	4	s.	U. S. Reclamation Service.
Foster.	Yellowstone.	2	37.0	68	9	10	27	42	0.60	0.45	1.0	3	19	7	3	n.	E. K. Bowman.			
Garnett.	Fergus.	5,500	3	34.7	+ 8.6	65	9	6	27	41	0.10	0.54	0.10	1.0	1	13	13	4	w.	Thos. E. Scally.
Glasgow.	Valley.	2,092	15	34.7	+ 8.6	65	9	6	27	41	0.10	0.54	0.10	1.0	1	13	13	4	w.	W. M. Leonard.
Glendive.	Dawson.	2,069	21	36.4	+ 7.5	60	15	12	2	38	0.05	0.53	0.05	0.8	1	15	14	1	s.	E. C. Leonard.
Goldbutte.	Hill.	4	35.5	60	18	11	27	40	0.02	0.02	0.5	1	14	12	4	w.	Joseph Berthelote.			
Graham.	Custer.	6	37.0	68	14	11	26	39	0.08	0.08	T.	1	18	9	3	sw.	J. S. Rue.			
Grayling.	Gallatin.	6,700	6	25.0	46	9	6	27	40	0.64	0.37	5.0	5	4	18	6	sw.	P. Kerzenmacher.		
Great Falls.	Cascade.	3,550	20	44.8	+ 9.7	62	18	20	26	30	0.06	0.78	0.04	0.2	3	8	21	1	sw.	Robert Deardorf.
Half Way House.	Broadwater.	6,000	2	46.4	61	19	10	28	46	0.00	0.50	7.8	4	12	15	3	sw.	Gordon Deans.		
Harlowton.	Meagher.	4,165	4	36.4	61	19	10	28	46	0.00	0.50	7.8	4	12	15	3	sw.	Joseph Mutr.		
Havre.	Hill.	2,505	32	38.0	+ 7.4	63	9	9	27	41	0.15	0.62	0.09	0.9	3	8	15	7	sw.	U. S. Weather Bureau.
Helena.	Lewis and Clark.	4,110	32	39.6	+ 6.9	60	13	17	27	32	0.49	0.32	T.	4	4	12	14	sw.	Do.	
Highwood.	Chouteau.	5	39.9	68	9	11	2	37	0.48	0.15	1.9	3	12	9	9	sw.	W. S. McCord.			
Huntley.	Yellowstone.	3,014	6	39.9	68	9	11	2	37	0.48	0.15	1.9	3	12	9	9	sw.	U. S. Reclamation Service.		
Jones Canyon.	Gallatin.	6,800	3	39.9	68	9	11	2	37	0.48	0.15	1.9	3	12	9	9	sw.	James McCune.		
Jordan.	Dawson.	6	36.4	69	9	9	30	47	0.00	0.00	0	0	0	0	0	0	sw.	W. C. Henderson.		
Knobles Ranch.	Hill.	1	36.2	+ 2.7	62	17	7	27	42	0.16	0.15	1.2	2	17	4	9	w.	F. H. Knoble.		
Lewistown.	Fergus.	4,010	14	36.2	+ 2.7	62	17	7	27	42	0.16	0.15	1.2	2	17	4	9	w.	W. W. Watson.	
Lonetree.	Chouteau.	3,280	6	43.5	65	9	18	1	43	0.13	0.08	1.5	2	24	3	3	sw.	E. Wilson.		
Lytle.	Teton.	5	39.4	60	18	15	29	32	0.04	0.03	0.5	2	30	0	0	sw.	J. F. Falt.			
Malta.	Valley.	2,240	5	34.4	67	9	8	27	43	0.03	0.03	0.8	1	10	14	6	w.	U. S. Reclamation Service.		
Medicine Lake.	do.	1	33.0	66	9	7	27	39	0.15	0.15	4.0	1	22	5	2	sw.	J. S. Collier.			
Mildred.	Custer.	3	39.6	+ 8.7	60	9	17	1	29	0.37	0.05	T.	1	9	20	1	nw.	Leon B. Clark.		
Miles City.	do.	2,371	20	39.6	+ 8.7	60	9	17	1	29	0.37	0.05	T.	1	9	20	1	nw.	U. S. Weather Bureau.	
Norris.	Madison.	4,845	5	40.9	57	13	19	27	26	0.20	0.20	4.0	1	16	0	14	s.	Madison River Power Co.		
Nye.	Sweet Grass.	3	38.2	68	22	6	27	43	0.05	0.05	0.05	0	0	0	0	0	sw.	F. L. Bryant.		
Olsen Creek.	Jefferson.	6,345	3	38.2	68	22	6	27	43	0.05	0.05	0.05	0	0	0	0	sw.	Robert Olsen.		
Pinegrove.	Musselshell.	7,000	3	35.8	63	14	4	1	35	T.	T.	0	0	23	6	1	nw.	G. A. Woodcock.		
Pipestone Pass.	Jefferson.	2,757	35.8	63	14	4	1	35	T.	T.	0	0	23	6	1	nw.	Mrs. T. Keirmeyer.			
Plevna.	Custer.	2,020	26	35.6	+ 7.7	70	7	10	27	43	0.62	0.11	0.62	2.0	1	23	4	3	w.	C. C. Conser.
Poplar.	Valley.	5,548	12	35.0	+ 3.9	60	9	8	27	32	0.21	0.41	0.12	2.0	3	8	10	12	sw.	H. M. Cosier.
Red Lodge.	Carbon.	4,383	13	39.7	+ 5.9	60	9	10	27	39	T.	0.46	T.	0	11	6	13	sw.	I. A. Draper.	
Renova.	Jefferson.	3,640	2	38.4	70	10	6	1	51	0.12	0.12	0	1	24	3	3	w.	F. B. Elmer.		
Ryegate.	Musselshell.	2,050	6	34.8	62	18	10	5	39	0.06	0.06	0	1	19	8	3	nw.	H. Scherfberg.		
Savage.	Dawson.	3,276	1	37.3	68	9	14	27	39	0.07	0.07	2.0	1	23	0	7	w.	U. S. Reclamation Service.		
Shelby.	Teton.	1	36.5	+ 7.7	67	9	9	27	39	0.20	0.56	0.20	2.0	1	15	8	7	sw.	C. D. Kicher.	
Sidney.	Dawson.	10	36.5	+ 7.7	67	9	9	27	39	0.20	0.56	0.20	2.0	1	15	8	7	sw.	Fred W. Arndt.	
Springbrook.	do.	4,500	2	34.2	58	9	5	27	39	0.26	0.12	T.	4	13	13	4	sw.	Mrs. H. L. Miller.		
Stearns.	Lewis and Clark.	1	34.2	58	9	5	27	39	0.26	0.12	T.	4	13	13	4	sw.	Estelle W. Estill.			
Sunlit Farm.	Blaine.	4,650	3	35.0	56															



TABLE 1.—Climatological data for November, 1912. District No. 6—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelting.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.		
North Dakota—Contd.																			
Carson.	Morton.			39.0		64	10†	15	24	36	0.00		0.00	0	0	15	6	9	D. J. Basquin.
Dickinson.	Stark.	2,543	20	31.8	+ 4.8	57	19	10	21	30	0.18	- 0.41	0.10	0	2	15	10	5	L. R. Waldron.
Edgeley.	Lamoure.	1,468	11	34.4	+ 3.5	65	19	6	24	45	T.	- 0.46	T.	0.3	0	12	8	10	O. A. Thompson.
Energy.	McLean.																		T. L. Stanley.
Epping.	Williams.		5								0.06		0.06	1.0	1	21	7	2	M. E. Ugen.
Fullerton.	Dickey.	1,439	14	33.4	+ 4.4	62	10	7	24	39	0.12	- 0.48	0.12	1.2	1	23	4	3	F. O. Alin.
Garrison.	McLean.	1,901	3	30.4	+ 4.9	50	17	4	2	27	0.09	- 0.64	0.09	1.0	1	8	13	9	G. L. Robinson.
Haley.	Bowman.		4	37.0		62	18	8	2	43	T.		T.	T.	0				A. O. Lawrence.
Hettinger.	Adams.	2,253	6	35.4		67	10	10	19	45	T.		T.	0	0	14	10	6	W. R. Lanxon.
Howard (near).	Divide.	2,275	6	33.8		58	15	5	27	40	0.20		0.20	2.2	1	10	16	4	C. P. Amsbaugh.
Jamestown.	Stutsman.	1,390	25	33.2	+ 7.0	60	6	10	27	41	0.15	- 0.66	0.08	1.5	3	19	2	9	Thos. Pettigrew.
Lamoure.	Kidder.		5	30.8		60	6	8	24	31	T.		T.	T.	0	19	4	7	E. V. Virgin.
McHenry (near).	Eddy.		3																John Knox.
Marmarth (near).	Bowman.		5	35.8		63	17	10	1	36	0.02		0.02	T.	1	14	14	2	S. P. Grane.
Marstonmoor.	Stutsman.		5	29.8		58	9	4	27	37	T.		T.	T.	0	13	13	4	H. H. McCumber.
Medora.	Billings.	2,225	16																J. W. Hesser.
Melville.	Foster.	1,590	15	33.4	+ 5.1	60	19	3	27	35	0.05	- 0.24	0.05	0.5	1				J. P. Kidder.
Mott.	Hettinger.		6	34.4		63	20	5	2	41	0.04		0.04	0	1	15	7	8	O. H. Opland.
Napoleon.	Logan.	1,955	21	32.8	+ 7.5	69	10	3	24	42	0.05	- 0.77	0.05	T.	1	14	10	6	C. J. Hoof.
New England.	Hettinger.	2,400	17	32.7	+ 5.2	60	19	1	7	35	T.	- 0.56	T.	0	0	23	5	2	J. M. Connolly.
New Rockford.	Eddy.	1,531	3	31.4		52	19	9	27	30	T.		T.	T.	0				J. V. M. Sundberg.
New Salem.	Morton.	2,163	6	33.4		60	19	8	24	29	T.		T.	0	0	8	19	3	J. Christiansen.
Orange.	Adams.		6	35.6		68	10	8	23	45	T.		T.	0	0				J. E. Goforth.
Ranger.	Billings.																		R. E. Sheriff.
Steele.	Kidder.	1,857	17								T.	- 0.43	T.	T.	0	14	16	0	H. S. Wood.
Turtle Lake.	McLean.										T.		T.	T.	0	16	11	3	E. O. Ranum.
Washburn.	do.	1,731	9	31.9		55	19	12	24	25	0.00		0.00	0	0	16	12	2	W. R. Peterson.
Williston.	Williams.	1,875	33	35.2	+ 10.0	67	9	12	27	31	0.14	- 0.46	0.14	1.0	1	7	18	5	U. S. Weather Bureau.
South Dakota.																			
Aberdeen.	Brown.	1,300	22	36.3	+ 8.3	70	10	4	24	48	0.10	- 0.82	0.10	1.0	1	17	9	4	D. G. Gallett.
Academy.	Charles Mix.		13	41.2	+ 5.8	79	10	3	24	48	T.	- 0.46	T.	0	0	22	8	0	I. T. Lothrop.
Armour.	Douglas.	1,521	16																T. J. Markey.
Bellefourche.	Butte.	3,000	4	40.0		71	14	11	24	49	T.		T.	T.	0	9	17	4	U. S. Reclamation Service.
Brookings.	Brookings.	1,636	23	36.5	+ 7.1	70	10	8	24	46	T.	- 0.56	T.	T.	0	12	15	3	Experiment Station.
Bryant.	Hamlin.	1,846									T.		T.	T.	0	11	18	1	J. W. Ault.
Camp Crook.	Harding.	3,000	20	36.2	+ 5.5	67	10	2	27	46	T.	- 0.45	T.	T.	0	17	8	5	U. S. Forest Service.
Canton.	Lincoln.	1,248	17	39.6	+ 6.2	78	7	5	25	45	0.00	- 0.97	0.00	0	0	28	0	2	John H. Holsey.
Cascade Springs.	Fall River.	3,422	4	37.2		69	10	9	26	48	0.18		0.18	T.	1	18	8	4	Fred Noerenberg.
Castlewad.	Hamlin.	1,685	6	35.2		71	10	8	24	43	0.03		0.03	T.	1	7	8	15	M. N. Bradley.
Centerville.	Turner.	1,229	15	38.2	+ 3.8	75	10	9	24	47	0.00	- 0.75	0.00	0	0	9	13	8	Frank Williams.
Clark.	Clark.	1,779	18	34.4	+ 4.7	69	10	5	24	39	T.	- 0.80	T.	T.	0	21	8	1	O. H. La Craft.
Cottonwood.	Stanley.	2,414	4	38.4		76	10	3	24	52	T.		T.	T.	0	17	11	2	Experiment Station.
Custer.	Custer.	5,316									0.00		0.00	0	0	25	3	2	R. P. Imes.
Daviston.	Perkins.		3																P. A. Sattler.
Deadwood.	Lawrence.	4,535	3	38.2		68	10	9	27	41	0.15		0.10	1.5	2	19	7	4	R. E. Grimshaw.
Deerfield.	Pennington.	6,000	3								0.15		0.07	1.8	4	9	17	4	Frank E. Miller.
De Smet.	Kingsbury.	1,726	19	35.2	+ 5.1	70	10	7	24	41	0.00	- 0.66	0.00	0	0	17	12	1	W. E. White.
Dowling.	Stanley.	2,250	3	39.4		71	10	6	30	43	0.06		0.06	0.5	1	20	8	2	M. P. Dowling.
Dumont.	Lawrence.	6,195	3								0.45		0.23	1.0	4	19	7	4	A. B. Wood.
Eagle Butte.	Dewey.	2,415		38.6		73	10	7	24	35	T.		T.	T.	0	22	8	0	Dr. John F. Chandler.
Eales.	Potter.		1					7	24	35	T.		T.	T.	0	17	12	1	A. H. Peterson.
Elk Mountain.	Custer.	4,700	3								T.		T.	T.	0	11	15	4	James E. Blaine.
Ellingson.	Perkins.		3	37.0		68	10	11	30	37	T.		T.	T.	0	13	13	4	Carl G. Moen.
Englewood.	Lawrence.	5,723	3																T. J. Cummins.
Eureka.	McPherson.	1,884	3	33.8		70	10	1	24	48	T.		T.	0	0	18	12	0	Experiment Station.
Fairfax.	Gregory.		8	41.8		82	10	3	24	43	T.		T.	T.	0	29	1	0	U. G. Stevenson.
Faulkton.	Faulk.	1,595	17	37.2	+ 8.1	72	10	1	24	42	0.00	- 0.49	0.00	0	0	25	0	5	Miss Belle Talcott.
Flandreau.	Moody.	1,565	22	37.4	+ 7.2	71	10	10	24	42	0.00	- 0.84	0.00	0	0	7	20	3	D. R. McLean.
Forestburg.	Sanborn.	1,231	20	37.7	+ 6.9	79	10	2	24	50	0.00	- 0.60	0.00	0	0	24	5	1	S. S. Judy.
Fort Meade.	Meade.	3,624	29	40.1	+ 5.5	74	10	12	26	43	T.	- 0.63	T.	T.	0	19	4	7	Post Hospital.
Frederick.	Brown.	1,371	3	35.2		67	4	0	24	57	0.10		0.10	1.0	1	15	7	8	J. E. Jeffers.
Greenmont.	Lawrence.	6,430	3								0.10		0.10	1.0	1	17	11	2	H. C. Hoffbuhr.
Greenwood.	Charles Mix.		20	43.0	+ 6.6	81	10	7	24	48	0.00	- 0.67	0.00	0	0	15	14	1	T. C. Williamson.
Hardingrove.	Stanley.			39.2		75	10	5	24	49	0.02		0.02	0.2	1	17	6	7	Mrs. Laura Sinclair.
Hardy Ranger Station.	Lawrence.	6,600	3								0.20		0.20	2.2	1	13	7	10	Mrs. Mary M. Schmidt.
Harveys Ranch.	do.	6,282	2								0.50		0.50	2.0	1	16	7	7	Jerome Harvey.
Hermosa.	Custer.	3,278	6	41.5		73	10	6	26	45	T.		T.	T.	0	18	9	3	S. M. Booth.
Higmore.	Hyde.	1,890	16	37.8	+ 5.4	73	10	3	24	44	0.00	- 0.49	0.00	0	0	15	13	2	Experiment Station.
Hopewell.	Stanley.		2	40.6		81	10	5	24	51	0.00		0.00	0	0	19	9	2	E. R. Myers.
Howard.	Miner.	1,564	20	35.4	+ 4.7	73	10	1	24	44	0.00	- 0.64	0.00	0	0	17	12	1	J. J. Cox.
Howell.	Hand.		10	36.2	+ 5.2	78	10	1	24	47	0.00	- 0.52	0.00	0	0	25	4	1	M. A. Shuster, jr.
Huron.	Beadle.	1,306	30	37.6	+ 10.2	74	10	6	24	46	T.	- 0.58	T.	T.	0	13	16	1	U. S. Weather Bureau.
Ipswich.	Edmunds.	1,530	15	35.8	+ 8.1	70	10	1	24	49	T.	- 0.45	T.	T.	0	17	11	2	H. J. Dailey.
Kadoka.	Stanley.	2,467	3	41.1		78	9	8	24	45	0.00		0.00	0	0	13	9	8	Rev. D. S. Brown.
Kennebec.	Lyman.	1,689	19	38.0	+ 6.0	81	10	1	24	53	0								



Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in hours.	Total snowfall, unmelting.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of overcast days.			
<b>South Dakota—Contd.</b>																					
Parkston	Hutchinson	1,400																		W. C. Rempfer.	
Pierre	Hughes	1,572	20	40.6	+ 9.0	71	10		24	40	T.	- 0.43	T.	0	0	16	9	5	nw.	U. S. Weather Bureau.	
Plankinton	Aurora	1,528	18						9	40	T.	- 0.51	T.	0	0	18	12	0	nw.	W. G. Andrews.	
Pollock	Campbell		6	34.1					0	24	48	T.	T.	0	0	19	8	3	nw.	J. H. Jones.	
Rapid City	Pennington	3,251	24	40.9	+ 7.3	71	10		10	27	37	0.01	- 0.43	0.01	0	11	14	5	w.	U. S. Weather Bureau.	
Redfield	Spink	1,285	14	36.6	+ 6.1	73	10		5	24	43	0.00	- 0.42	0.00	0	25	3	3	sw.	A. S. Hall.	
Rochford	Pennington	5,228	2									0.11		0.08	1.3	3	15	1	nw.	Mrs. M. E. Deffenbaugh.	
Rosbud	Todd	2,600	18	41.2	+ 6.9	73	10		4	24	47	0.02	- 0.68	0.02	0.2	1	13	16	1	sw.	W. M. Ege.
Roslyn	Day		4	34.0					5	24	43	T.	T.	T.	0	14	14	2	nw.	O. O. Floren.	
Selby	Walworth		4	36.5					4	24	37	0.00		0.00	0	0	16	8	6	nw.	Miss Gertrude Hall.
Sioux Falls	Minnehaha	1,400	21	39.0	+ 7.4	73	10		11	24	39	T.	- 0.83	T.	0	12	14	4	uw.	J. H. Betchold.	
Sisseton	Roberts	1,202	6	36.8					15	24	34	0.04		0.04	0.4	1	23	0	7	nw.	George Gray.
Sorum	Perkins		1	38.4					13	1	36	T.		T.	0	16	9	5	nw.	M. S. Eberhart.	
Spearfish	Lawrence	3,647	22	39.6	+ 3.4	66	14		19	27	34	0.00	- 0.65	0.00	0	16	13	1	w.	A. E. Johnson.	
Stephan	Hyde	1,840	8	36.0					4	24	49	T.		T.	0	20	8	2	nw.	Rev. A. Mattingly.	
Tama	Meade		3	38.6					9	24	48	T.		T.	0	18	10	2	nw.	Mrs. Monte Frank.	
Timber Lake	Dewey	2,163		38.0					5	24	40	0.00		0.00	0	24	6	0	nw.	R. T. Hollan.	
Tyndall	Bonhomme	1,418	15	41.4	+ 7.4	82	10		7	24	47	0.00	- 0.66	0.00	0	19	11	0	nw.	F. F. Chladek.	
Vale	Butte	2,765	4	38.3					10	29	50	0.07		0.05	0.5	2	16	10	4	nw.	U. S. Reclamation Service.
Vermillion	Clay	1,222	11	42.4	+ 5.5	78	11		10	24	41	0.27	- 0.72	0.27	0	1	21	4	5	nw.	Prof. E. C. Perisho.
Waters Ranch	Lawrence	4,000	2									0.10		0.07	0.5	3	13	9	8	w.	George Waters.
Watertown	Codington	1,735	18	35.4	+ 7.4	70	10		10	24	45	T.	- 0.65	T.	0	7	12	11	n.	Robert Q. Wood.	
Wentworth	Lake	19	37.4	+ 8.1	67	7			13	30	39	0.00	- 0.65	0.00	0	0	24	6	0	s.	R. C. Zimmermant.
Wessington Springs	Jerauld	1,410	12									0.00		0.00	0	0	25	5	0	nw.	Mrs. N. J. Dunham.
White Lake	Aurora	1,646	3									0.00		0.00	0	0	24	3	3	nw.	Mrs. G. A. Rogers.
Winner	Tripp	2,000		42.0					5	23	61	0.00		0.00	0	0	24	3	3	nw	



TABLE 1.—Climatological data for November, 1912. District No. 6—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.					Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.			
Nebraska—Continued.																					
Bloomfield.	Knox.		6	40.0		79	10	8	24	50	T.		T.	0	0	17	13	0	nw.	Dr. L. C. Bleick.	
Bradshaw.	York.	1,715	15								2.21	+ 1.01	1.58	0	2	24	3	3		E. C. Roggy.	
Brewster.	Blaine.		1								T.		T.	0	0	22	7	1	sw.	W. S. Turnbull.	
Bridgeport.	Morrill.	3,658	16	38.0	+ 1.2	76	9	-1	27	49	0.20	- 0.17	0.20	2.0	1	20	8	2	nw.	R. H. Willis.	
Broken Bow.	Custer.	2,477	18	39.0	+ 2.7	70	6†	6	23	61	0.00	- 0.46	0.00	0	0	25	0	5	w.	R. V. McCall.	
Bruning.	Thayer.	1,583	2								0.29		0.29	0	1	20	9	1	sw.	Henry Middendorf.	
Burge.	Cherry.	2,674	4	40.3		69	18	2	23	52						16	12	2	n.	H. A. Davis.	
Burwell.	Garfield.	2,180	20								0.00	- 0.45	0.00	0	0					W. L. McMullen.	
Butte.	Boyd.		6	41.8		81	10	2	24	48	0.00		0.00	0	0	27	3	0	nw.	W. Whittla.	
Cairo.	Hall.	1,951	4								1.51		1.51		1					Elliott Harrison.	
Callaway.	Custer.	2,555	20	43.4	+ 5.9	80	10	10	24	52	0.53	- 0.03	0.53		1	19	6	5	nw.	J. H. Evans.	
Cambridge.	Furnas.	2,258	6	41.9		79	10	14	30	50	1.05		1.05	0	1	26	3	1	nw.	Chas. Jensen.	
Columbus.	Platte.	1,442																		A. L. Rush.	
Crete.	Saline.	1,368	29	42.9	+ 4.3	70	7	16	24	34	0.45	- 0.42	0.45	0	1	22	4	4	s.	Doane College.	
Culbertson.	Hitchcock.	2,565	26	43.0		74	11	10	26	47	0.10	- 0.35	0.10	1.0	1	24	3	3	nw.	Homer L. Nye.	
Curly.	Sioux.		3	37.7		87	14	3	1	62	0.30		0.30	3.0	1				w.	A. E. Hann.	
Curtis.	Frontier.	2,553	16	42.0	+ 3.8	72	10†	15	27	44	0.04	- 0.50	0.04	0	1	24	5	1	nw.	Dr. S. R. Razee.	
David City.	Butler.	1,619	23	42.4	+ 6.4	71	7†	14	24	37	1.20	+ 0.25	1.20	0	1	15	9	6	nw.	S. Clingman.	
Du Bois.	Pawnee.	1,074	8								0.70		0.62	T.	2	18	4	8	sw.	O. M. Backus.	
Dumas.	Garfield.		3	41.2		82	10	2	24†	51	0.00		0.00	0	0	28	2	0	sw.	Emile Raes.	
Elm Creek.	Buffalo.	2,268	5								0.90		0.90	0	1					E. L. Sutton.	
Elsie.	Perkins.	3,382	5								0.21		0.21	T.	1					J. F. Brittain.	
Ericson (near).	Garfield.	2,029	21								0.00	- 0.41	0.00	0	0	26	4	0	s.	J. A. Bodyfield.	
Ewing.	Holt.	1,888	22	40.5		86	10	2	24	55	T.	- 0.44	T.	T.	0					G. H. Benson.	
Exeter.	Fillmore.	1,607	1								0.76		0.76	0	1					Erank Ainsworth.	
Fairbury.	Jefferson.	1,316	36	43.4	+ 3.5	72	10	15	24	42	0.14	- 0.80	0.14	T.	1	21	6	3	nw.	W. F. Cramb.	
Fairmont.	Fillmore.	1,641	20	40.9	+ 3.3	71	7	9	25	45	0.64	- 0.19	0.50	0.2	3	18	7	5	s.	C. B. & Q. R. R. Co.	
Falls City.	Richardson.	898	18	45.6	+ 2.5	74	9†	19	24	38	0.60	- 0.94	0.45	0	2	21	6	3	nw.	Dr. J. C. Yutzy.	
Fort Robinson.	Dawes.	3,764	30	38.3	+ 3.2	70	10	9	27	42	0.00	- 0.38	0.00	0	0	17	7	6	sw.	Post Surgeon.	
Franklin.	Franklin.	1,820	22	42.6	+ 4.0	80	10	15	24†	54	2.25	+ 1.50	2.25		1	21	7	2	nw.	A. R. Peck.	
Freemont.	Dodge.	1,203	32	42.0	+ 5.3	70	7†	15	2	45	0.60	- 0.44	0.60	0	1	21	4	5	nw.	Ernest Hahn.	
Fullerton.	Nance.	1,629	12	41.4		77	10	11	24	43	2.09	+ 0.95	2.09	T.	1	22	7	1	nw.	Dr. F. W. Johnson.	
Geneva.	Fillmore.	1,633	23	42.6	+ 4.0	72	7	15	24†	36	0.69	- 0.24	0.68	0	1	19	10	1	se.	F. M. Flory.	
Genoa.	Nance.	1,584	37	42.6	+ 7.1	74	10	12	24	42	1.78	+ 0.99	1.78	0	1	23	6	1	nw.	F. W. Parsons.	
Gordon.	Sheridan.	3,550	9	38.0		78		1	27	63	0.45		0.30	1.5	2					G. F. Williams.	
Gosper.	Gosper.		11								0.79	+ 0.23	0.79	0.5	1	26	3	1	sw.	E. H. Stoll.	
Gothenburg.	Dawson.	2,557	19								0.60	- 0.11	0.60	0	1					Dr. W. J. Bartholomew.	
Grand Island.	Hall.	1,860	21	42.9	+ 5.3	77	10	13	24	39	2.10	+ 1.30	1.70	3.0	2	22	2	6	w.	E. A. Barnes.	
Grant.	Perkins.	3,405	7	40.6		82	9	7	52	T.			T.	T.	0	22	4	4	nw.	Anson K. Holmes.	
Greeley.	Greeley.	2,021	17	42.7		78	9†	7	24	50	0.46	- 0.02	0.46	0	1	27	3	0	sw.	W. E. Morgan.	
Guide Rock.	Webster.	1,646	13								0.45	+ 0.43	0.45	0	1	18	6	6	nw.	J. S. Marsh.	
Haigler.	Dundy.	3,258																		J. L. Pember.	
Halsey.	Thomas.	2,695	10	40.7	+ 2.3	80	10	7	24	48	0.00	- 0.40	0.00	0	0	24	6	0	sw.	Bureau of Forestry.	
Hartington.	Cedar.	1,309	21	41.1	+ 7.1	79	10	10	24	43	T.	- 1.02	T.	T.	0	6	21	3	nw.	D. E. Ewing.	
Harvard.	Clay.	1,812	21	43.3	+ 6.4	71	10	15	24	33	1.60	+ 0.85	1.60	3.0	1	20	3	7	sw.	Bert Gregg.	
Hastings.	Adams.	1,932	22	41.6	+ 3.3	74	6†	14	23	44	1.85	+ 1.08	1.60	2.8	3	29	0	1	nw.	C. B. & Q. R. R. Co.	
Hayes Center.	Hayes.																			C. A. Ready.	
Hay Springs.	Sheridan.	3,821	26	37.8	+ 4.4	72	7	-1	27	43	0.50	- 0.12	0.30	5.0	3	12	16	2	sw.	A. Kadlecik.	
Hebron.	Thayer.	1,458	27	43.3	+ 4.2	73	7	16	24	39	0.52	- 0.65	0.52	0	1					Dr. C. M. Easton.	
Hemingford.	Box Butte.	4,256	4								0.10		0.10		1					A. S. Eneyart.	
Hendley.	Furnas.	2,231	8								1.00		1.00		1					T. L. Jones.	
Hershey.	Lincoln.	2,902	2								0.00		0.00	0	0	25	4	1		G. F. Palmer.	
Hillside.	McPherson.	3,484	4	38.7		77	10	7	26	49	T.		T.	0.1	0	18	8	4	nw.	Mrs. M. R. Lloyd.	
Holdrege.	Phelps.	2,324	22	42.8	+ 4.7	70	8	19	27	40	1.15	+ 0.47	1.15	6.0	1	22	6	2	nw.	C. B. & Q. R. R. Co.	
Hopewell.	Dodge.	1,228	15	39.9	+ 2.9	71	10	12	24	49	0.96	- 0.25	0.96	0	2	16	4	10	nw.	Dr. W. H. Heine.	
Hull (near).	Banner.		2								0.45		0.45	4.0	1	23	0	7	w.	Mrs. W. P. Miller.	
Imperial.	Chase.	3,278	22	41.0	+ 3.3	80	10	8	27	48	0.15	- 0.38	0.10	1.0	2	18	6	6	nw.	Robt. Malcolm.	
Kearney.	Buffalo.	2,146	24	42.9	+ 4.2	79	10	13	24	45	1.00	+ 0.39	1.00		1	20	9	1	sw.	City engineer.	
Kimball.	Kimball.	4,697	24	40.1	+ 4.0	75	8	-1	26	50	0.25	- 0.15	0.20	2.5	2	22	6	2	nw.	F. J. Bellows.	
Kirkwood.	Rock.		18	42.0	+ 7.3	80	10	-1	24	48	0.00	- 0.55	0.00	0	0	21	9	0	nw.	Mrs. C. Arter.	
Kowanda.	Garden.		4								0.10		0.10	1.0	1					Geo. W. Hulse.	
Lexington.	Dawson.	2,385	24	42.6	+ 5.4	78	10	13	23	46	0.91	+ 0.36	0.91	3.0	1	29	0	1	sw.	Robt. Chadwick.	
Lincoln.	Lancaster.	1,189	31	43.6	+ 5.6	71	7	16	24	33	0.36	- 0.49	0.36	T.	1	11	14	5	s.	U. S. Weather Bureau.	
Lodgepole.	Cheyenne.	3,820	13	39.6	+ 3.3	78	9	1	27	50	0.32	+ 0.12	0.20	3.0	2	15	8	7	nw.	R. T. Kidney.	
Loup City.	Sherman.	2,067	18	41.2	+ 4.4	78	10	7	24	47	0.72	+ 0.14	0.72	0	1	28	2	0	nw.	Harriet Hayhurst.	
Loyal.	Custer.																			C. H. Cass.	
McCook.	Red Willow.	2,506	19	42.2	+ 4.3	80	10	11	27	50	0.55	- 0.04	0.55	0	1	27	2	1	sw.	C. G. Cogizer.	
McCool Junction.	York.	1,575	14								1.00	- 0.04	1.00	0	1						



TABLE 1.—Climatological data for November, 1912. District No. 6—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Nebraska—Continued.																				
Sargent.	Custer.	2,339																		J. L. Ferguson.
Schuyler.	Colfax.	1,357	19	40.2		74	7	10	24	44	1.26	+ 0.43	1.26	0	1	25	1	4	nw.	R. O. Brownell.
Scottsbluff.	Scotts Bluff.	3,888	24	39.8	+ 3.4	73	9	1	27	46	0.67	+ 0.30	0.46	4.5	3	20	7	3	nw.	A. B. McCoskey.
Seward.	Seward.	1,435	22	45.0	+ 6.1	71	8	15	25	41	0.84	+ 0.19	0.84	T.	1	24	5	1	nw.	C. B. & Q. R. R. Co.
Sidney.	Cheyenne.	4,090	20								0.32	+ 0.03	0.20	2.0	2	27	2	1	nw.	John P. Fischer.
Springfield.	Sarpy.	1,052	1								0.40		0.30	T.	2	25	4	1	nw.	L. A. Bates.
Springview.	Keyapaha.	21	21	41.8	+ 6.5	77	10	3	24	45	T.	+ 0.43	T.	0	0	16	10	4	nw.	C. L. Phelps.
Stanton.	Stanton.	1,472	21	42.4	+ 6.8	73	7	12	24	46	1.40	+ 0.48	1.40	0	1	27	2	1	sw.	Alfred Pont.
Stratton.	Hitchcock.	2,804	17								0.80	+ 0.08	0.60	0	2				sw.	Miss Stella Vennum.
Superior.	Nuckolls.	1,574	27								0.43	+ 0.41	0.43	0	1				sw.	F. V. Bishop.
Syracuse.	Otoe.	1,059	20	43.4	+ 4.6	72	9†	16	25	44	0.30	+ 0.87	0.30	0	1	20	6	4	nw.	W. N. Hunter.
Table Rock.	Pawnee.	1,023	23								0.50	+ 1.00	0.50	0	1	24	3	3	nw.	E. D. Howe.
Tecumseh.	Johnson.	1,113	35								0.36	+ 0.83	0.36	0	1	18	7	5	sw.	L. E. Pratt.
Tekamah.	Burt.	1,060	21	42.1	+ 4.7	71	10	16	2†	42	0.81	+ 0.37	0.81	0	1	15	12	3	nw.	Dr. A. D. Nesbit.
University Farm.	Lancaster.	29	29	43.7	+ 3.8	71	10	16	24	36	0.29	+ 0.70	0.29	0	1	20	5	5	sw.	S. W. Perin.
Valentine.	Cherry.	2,613	24	40.6	+ 6.9	76	10	8	24	47	0.01	+ 0.72	0.01	T.	1	14	13	3	w.	U. S. Weather Bureau.
Wahoo.	Saunders.	1,187	10								0.60	+ 0.67	0.60	0	1	25	2	3	sw.	W. T. Mauck.
Wakefield.	Dixon.	1,387	19	40.6	+ 4.2	78	10	12	24	44	1.51	+ 0.48	1.51	0	1	23	4	3	s.	I. H. Weaver.
Walthill.	Thurston.										0.75		0.75		1	18	12	0	n.	E. W. Rossiter.
Watertown.	Buffalo.	2,299	7								0.20	+ 0.48	0.20	0	1				n.	R. E. Swift.
Wauneta.	Chase.	2,935	14								0.32	+ 0.93	0.32	T.	1	24	3	3	nw.	C. D. Fuller.
Weeping Water.	Cass.	1,080	35	42.2		72	10	15	25	46	0.32	+ 0.93	0.32	T.	1	24	3	3	nw.	S. W. Orton.
Westpoint.	Cuming.	1,313	25	43.0	+ 4.5	73	7	15	2†	44	2.30	+ 1.23	1.56	0	2	24	3	3	s.	J. C. Elliott.
Wisner.	do.	1,380	16								1.83	+ 0.62	1.83	0	1	27	2	1	sw.	F. C. Evans.
York.	York.	1,633	24	43.0	+ 4.6	74	7	13	24	42	1.15	+ 0.34	1.15	T.	1	25	4	1	nw.	A. T. Glauque.
Iowa.																				
Afton.	Union.	1,212	18	41.8	+ 5.0	67	10	19	24†	32	1.30	+ 0.07	0.78	T.	2	22	5	3	sw.	N. W. Rowell.
Allerton.	Wayne.		10	42.6	+ 2.0	71	10	17	27	35	0.62	+ 1.23	0.49	T.	4	24	1	5	s.	Maude Chase.
Alton.	Sioux.	1,305	7	39.2		66	10	13	24	37	0.67		0.67	T.	1	18	9	3	sw.	W. S. Slagle.
Atlantic.	Cass.	1,164	21	40.9	+ 5.5	70	10	17	2†	39	0.40	+ 0.38	0.40	0	1	11	9	10	nw.	Thos. H. Whitney.
Audubon.	Audubon.	1,301	18	40.2	+ 5.0	67	10	14	24	38	0.67	+ 0.67	0.62	0	2	14	10	6	sw.	Geo. E. Kellogg.
Bedford.	Taylor.		12	41.2	+ 5.8	70	10	12	25	41	0.43	+ 0.86	0.33	0	2	23	2	5	nw.	E. E. Healy.
Centerville.	Appanoose.		2																sw.	Gordon Peacock, Jr.
Chariton.	Lucas.	1,042	17	41.0	+ 2.3	71	10	14	25†	41	0.54	+ 0.76	0.30	T.	2	21	5	4	s.	C. C. Burr.
Clarinda.	Page.	1,009	22	40.8	+ 3.0	70	10	14	25	42	0.87	+ 0.29	0.33	T.	3	20	6	4	nw.	A. S. Van Sandt.
Corning.	Adams.	1,117	20	39.8	+ 2.6	74	12	15	2†	35†	0.79	+ 0.41	0.55	0	3				nw.	Jerome Smith.
Corydon.	Wayne.	1,101	19	42.7	+ 4.0	71	10	17	2†	33	0.70	+ 0.75	0.60	0	3	17	7	6	nw.	May C. Miller.
Council Bluffs.	Pottawattamie.		2	44.0†		72	10	15†	2	43†	0.52		0.52	0	1				nw.	B. W. Crossley.
Creston.	Union.	1,312	7	40.0		70	10	15	27†	39	0.38		0.15	0	3	17	4	9	sw.	O. J. Colby.
Cumberland.	Cass.		13								0.42	+ 0.56	0.42	0	1	24	2	4	sw.	J. H. Reppert.
Denison.	Crawford.	1,180	18	39.4	+ 3.8	69	10	11	2	42	0.82	+ 0.19	0.82		1	25	1	4	s.	W. C. Van Ness.
Elliott.	Montgomery.		17	41.6		70	10†	13	25	43	0.31		0.31	0	1	22	7	1	sw.	C. H. Westrope.
Greenfield.	Adair.		20	41.4	+ 4.8	70	10	16	27	33	0.75	+ 0.42	0.75	T.	1	19	10	1	sw.	R. B. Oldham.
Harlan.	Shelby.	1,182	13	40.0	+ 2.8	69	10	15	27	40	0.50	+ 0.54	0.50	T.	1	12	13	5	sw.	C. A. Reynolds.
Inwood.	Lyon.	1,474	8	38.6		74	10	6	24	43	0.04		0.04	0	1	18	9	3	nw.	F. B. Hanson.
Lake Park.	Dickinson.	1,479	5	37.8		71	10	12	27	47	1.50		1.50	T.	1	24	5	1	s.	A. E. Woodruff.
Lamoni.	Decatur.	1,120	5	41.4		68	9†	17	27†	38	0.43		0.18	T.	3	24	0	6	n.	T. J. Fitzpatrick.
Larrabee.	Cherokee.	1,266	22																sw.	R. C. Carnahan.
Le Mars.	Plymouth.	1,224	16	39.2	+ 4.7	67	10	13	24	36	1.10	+ 0.13	1.10	0	1	15	12	3	nw.	G. A. C. Clarke.
Lenox.	Taylor.	1,250	17	41.0	+ 3.1	68	10	15	27	33	1.33	+ 0.11	1.18	0	2	25	4	1	s.	J. L. Hurley.
Leon.	Decatur.	1,120	10	42.2	+ 1.6	69	10	18	25†	33	0.37	+ 1.55	0.20	0.5	3	10	14	6	s.	Morris Gardner.
Little Sioux.	Harrison.		7	41.8		71	10	12	27	43	0.98		0.98	0	1	22	4	4	nw.	Geo. H. Gibson.
Logan.	do.	928	45	41.4	+ 5.5	68	10	15	24	40	1.04	+ 0.21	1.04	T.	1	15	11	4	sw.	Glenn H. Stern.
Mount Ayr.	Ringgold.	1,236	19	41.9	+ 3.0	70	10	16	27†	33	0.73	+ 0.63	0.50	0	3	14	12	4	nw.	Alex Maxwell.
Murray.	Clarke.		21	41.8	+ 5.1	70	10	16	27	35	0.86	+ 0.23	0.44		2	9	18	3	sw.	N. T. Ashley.
Northboro.	Page.		15	43.4		77	11	17	25	35	1.26		1.08	0	3	19	7	4	nw.	J. M. Darby.
Odebolt.	Sac.		15	40.4†	+ 3.9	72	10	15	24	38	1.70	+ 0.56	1.70	0	1	23	5	2	sw.	E. Starnes.
Onawa.	Monona.	1,051	12	42.0	+ 3.7	70	10	17	24	37	1.20	+ 0.28	1.20	0	1	20	7	3	nw.	C. G. Perkins.
Pacific Junction.	Mills.	960	13	40.4	+ 1.3	69	10†	15	24†	41	0.43	+ 0.51	0.43	0	1	9	18	3	s.	H. H. McCartney.
Rock Rapids.	Lyon.	1,358	13	34.7	+ 2.8	67	7	12	25	47	0.00	+ 1.06	0.00	0	0	19	8	3	s.	W. C. Wyckoff.
Sheldon.	O'Brien.	1,422	12	39.3	+ 3.2	73	10	12	24	40	1.04	+ 0.04	1.04	0	1	8	11	11	nw.	Geo. Apperle.
Sibley.	Osceola.	1,212	19	36.3	+ 4.3	74	10	12	24	41	0.23	+ 0.76	0.23	0	2	12	16	2	sw.	H. G. Doolittle.
Sioux Center.	Sioux.		13	38.2	+ 2.9	66	10	11	24	36	0.54	+ 0.17	0.54	T.	1	18	9	3	s.	J. de Ruyter.
Sioux City.	Woodbury.	1,135	23	40.2	+ 5.9	70	7	13	24	35	1.03	+ 0.06	1.03	T.	1	18	9	3	nw.	U. S. Weather Bureau.
Spencer.	Clay.		2	38.0		72	10†	10	24	42	1.15		1.15		1				sw.	S. Gillespie.
Thurman.	Fremont.		15	41.3	+ 2.7	70	10†	18	24†	42	0.42	+ 0.88	0.42	T.	1	9	13	8	nw.	C. R. Paul.
Washita.	Cherokee.	1,157	14	38.6	+ 2.1	74	10	11	27	44	1.80	+ 0.83	1.80	0	1	28	0	2	s.	H. L. Felter.
Kansas.																				
Abilene.	Dickinson.	1,157	17								0.14	+ 0.86	0.08	T.	2	21	3	6	sw.	T. W. Sherman.
Agricultural College.	Riley.	1,100	54	45.2	+ 3.5	75	10	16	26†	44	0.05	+ 1.26</								



TABLE 1.—Climatological data for November, 1912. District No. 6—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.					Sky.					Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelting.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of overcast cloudy days.	Prevailing wind direction.	
Kansas—Continued.																				
Hanover	Washington	1,225	15	44.8	—	73	9	16	24	42	0.09	— 0.88	0.09	0	1	21	4	5	sw.	A. Jaedicke, jr.
Harrison	Jewell	1,804	11	43.3	+ 2.2	73	7	15	2	43	0.23	— 0.79	0.23	0	1	24	3	3	s.	Mahlon Tegley.
Hays	Ellis	2,000	44	43.5	+ 3.1	80	10	13	27	44	1.13	+ 0.41	0.87	2.5	2	19	9	2	sw.	G. K. Helder.
Hill City	Graham	2,134	4	44.6	—	83	10	16	26	50	2.52	—	2.52	3.0	1	22	6	2	s.	C. A. G. Inlow.
Horton	Brown	1,188	23	45.0	+ 3.7	73	10	18	24	36	0.41	— 0.81	0.34	0	3	19	6	5	nw.	Mrs. S. C. Belden.
Hoxie	Sheridan	2,700	13	43.8	+ 3.1	83	10	10	26	46	1.15	+ 0.47	0.80	5.0	2	17	12	1	nw.	I. L. Vinson.
Lawrence	Douglas	997	44	46.1	+ 4.5	73	10	20	24	34	1.23	— 0.03	1.19	0	2	22	3	5	sw.	Prof. H. P. Cady.
Leavenworth	Leavenworth	913	68	47.4	+ 5.9	72	10	19	24	34	1.94	— 0.15	1.86	0	4	22	0	8	sw.	Dr. A. F. Yohe.
Lebanon	Smith	1,812	14	45.2	+ 5.1	70 <sup>4</sup>	4	17 <sup>4</sup>	24	46 <sup>4</sup>	0.15	— 0.74	0.15	0	1	27	1 <sup>4</sup>	1 <sup>4</sup>	n.	E. V. Bower.
Leoti	Wichita	3,300	9	42.4	—	80	10	4	27	52	0.11	—	0.09	0.5	2	19	7	4	sw.	L. E. Gorsuch.
Lincoln	Lincoln	1,374	—	46.3	—	80	10	12	26	52	0.05	—	0.05	T.	1	20	5	5	n.	R. W. Greene.
Lindsborg	McPherson	1,333	6	—	—	—	—	—	—	—	0.00	—	0.00	0	0	17	1	12	s.	A. J. Fredrickson.
McCracken	Rush	2,139	—	44.8	—	82	10	13	27	49	1.00	—	0.80	2.0	2	22	5	3	sw.	E. D. Floyd.
Minneapolis	Ottawa	1,259	22	45.1	+ 4.3	77	10	18	24	41	0.10	— 0.66	0.10	0	1	19	5	6	s.	J. L. Steele.
Moran	Allen	1,088	16	47.4	+ 1.7	74	10	20	25	40	0.53	— 0.81	0.28	0.7	3	21	3	6	sw.	C. J. Norton.
Natoma	Osborne	1,834	3	—	—	—	—	—	—	—	1.20	—	1.20	3.0	1	24	3	3	se.	C. O. Hunt.
Norton	Norton	2,284	14	43.2	+ 2.3	76	10	17	27	42	1.86	+ 1.40	1.86	6.0	1	21	9	0	nw.	Sim Steffel.
Oberlin	Decatur	2,539	25	—	—	—	—	—	—	—	1.15	+ 0.52	1.15	T.	1	21	6	3	nw.	I. K. Huber.
Oketo	Marshall	1,194	4	44.2	—	72	10	17	24	39	0.28	—	0.28	T.	1	6	19	5	nw.	J. A. Church.
Olathe	Johnson	1,032	17	44.6	— 0.1	73	10	17	28	39	0.62	— 1.29	0.51	0	2	19	7	4	sw.	Dr. S. B. S. Wilson.
Ottawa	Franklin	926	18	46.1	+ 2.7	75	10	19	25	41	0.86	— 0.83	0.85	—	2	22	4	4	s.	W. J. Sheldon.
Phillipsburg	Phillips	1,939	21	44.4	+ 4.4	76	10	18	28	45	2.38	+ 1.82	2.38	1.0	1	23	6	1	nw.	N. E. Bailey.
Plainville	Rooks	2,156	6	—	—	—	—	—	—	—	1.10	—	1.10	T.	1	24	6	0	s.	P. D. Spellman.
Pleasanton	Linn	862	10	47.2	+ 2.0	74	10	17	25	37	0.31	— 1.61	0.15	0.5	3	24	0	6	sw.	B. F. Blaker.
Quenemo	Osage	941	—	—	—	—	—	—	—	—	0.64	—	0.39	0	2	23	3	4	sw.	R. L. Graham.
Republic	Republic	1,495	9	43.8	—	75	7	15	24	43	0.18	—	0.18	0	1	—	—	—	—	J. W. Ambrose.
Russell	Russell	1,834	13	45.6	+ 3.1	80	10	16	26	48	0.35	— 0.59	0.35	T.	1	22	4	4	n.	Robert Brebner.
Russell Springs	Logan	—	2	—	—	—	—	—	—	—	T.	—	T.	0	—	—	—	—	—	Murray Wallace.
St. Francis	Cheyenne	3,288	4	41.6	—	84	10	4	27	52	0.48	—	0.28	4.0	2	17	10	3	sw.	J. E. Uplinger.
Salina	Saline	1,227	28	—	—	—	—	16	17	—	0.16	— 0.61	0.16	T.	1	20	8	2	s.	Prof. A. W. Jones.
Scott	Scott	2,971	6	44.8	—	85	10	6	27	52	0.35	—	0.24	2.0	2	27	3	0	se.	J. B. Loughran.
Smith Center	Smith	1,800	2	44.8	—	79	7	17	2	45	0.72	—	0.72	0	1	24	4	2	se.	W. H. Nelson.
Topeka	Shawnee	997	26	46.5	+ 4.8	74	10	20	24	34	1.92	+ 0.66	1.78	0	2	19	8	3	s.	U. S. Weather Bureau.
Tribune	Greeley	3,612	13	43.0	—	78	10	6	27	44	0.40	— 0.03	0.30	0.2	3	15	10	5	s.	Charles E. Cassell.
Valley Falls	Jefferson	913	13	44.0	+ 2.9	74	10	16	24	39	0.55	— 0.99	0.45	0	3	21	5	4	s.	Miss Nettie Maxwell.
Vinland	Douglas	880	3	—	—	—	—	—	—	—	0.97	—	0.95	0	3	—	—	—	—	A. Schick.
Wakeeney	Trego	2,456	29	45.0	+ 4.3	83	10	8	27	45	0.90	+ 0.23	0.83	1.0	2	24	2	4	s.	A. S. Peacock.
Wallace	Wallace	3,303	42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	M. T. Griggs.
Wamego	Pottawatomie	1,002	19	—	—	—	—	—	—	—	T.	— 1.20	T.	0	0	20	5	5	sw.	M. L. Stone.
Missouri.																				
Amoret	Bates	850	4	45.7	—	75	11	18	25	42	0.13	—	0.13	0	1	21	4	5	sw.	Darby Fruit Farm.
Appleton City	St. Clair	853	23	46.8	+ 1.7	78	10 <sup>4</sup>	18	24	52	0.74	— 1.60	0.42	T.	3	16	11	3	sw.	T. C. Brown.
Arthur	Vernon	767	21	46.6	+ 2.3	75	9 <sup>4</sup>	15	25	44	0.40	— 1.84	0.20	0	2	22	5	3	sw.	J. T. Armstrong.
Avalon	Livingston	—	28	44.3	+ 1.2	73	10	18	25	36	1.57	— 0.56	0.70	T.	3	23	3	4	sw.	F. G. Ashbaugh.
Bethany	Harrison	881	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	W. H. Skinner.
Bolivar	Polk	1,070	25	46.8	+ 0.5	75	10	18	25	38	1.86	— 0.88	1.86	0	1	22	5	3	sw.	A. C. Fink.
Boonville	Cooper	600	35	—	—	—	—	—	—	—	1.13	— 1.30	0.90	0	3	23	1	6	nw.	C. Randecker.
Brunswick	Chariton	652	35	44.8	+ 3.1	75	10	18	25	39	1.52	— 0.51	1.12	T.	2	19	2	9	sw.	Louis Bencke.
Clinton	Henry	800	26	46.3	—	76	10	18	25	43	0.18	— 1.75	0.18	0	1	23	4	3	sw.	A. E. Derwent, M. D.
Columbia	Boone	784	24	44.8	+ 2.4	75	10	19	25	34	1.33	— 0.98	1.24	0.1	4	12	14	4	s.	U. S. Weather Bureau.
Crocker	Platte	1,300	2	46.6	—	78	10	15	25	43	1.15	—	1.03	0	2	20	3	7	nw.	Ira H. Stephens.
Eldon	Miller	—	8	47.1	—	77	11	21	25	37	1.96	—	1.58	0.1	3	22	4	4	sw.	G. M. Tinsley, M. D.
Eldorado Springs	Cedar	750	8	46.6	—	77	10	16	25	40	1.17	—	0.84	0	2	19	6	3 <sup>4</sup>	sw.	Samuel Graham.
Fayette	Howard	725	30	44.1	+ 1.3	75	10 <sup>4</sup>	18	25	37	0.48	— 1.56	0.34	T.	2	25	1	4	—	Prof. T. B. Smith.
Fulton	Callaway	818	22	47.2 <sup>4</sup>	+ 2.7	79	4	20	15	19	4.27	+ 1.99	2.37	0	3	25 <sup>4</sup>	3 <sup>4</sup>	4 <sup>4</sup>	—	Russel Johnston.
Glasgow	Howard	618	36	—	—	—	—	—	—	—	0.08	— 0.84	0.64	0	2	24	1	5	w.	J. J. Shaughnessy.
Grant City	Worth	1,130	21	43.6	+ 1.9	72	10	18	25	34	0.99	— 0.44	0.42	0	3	24	1	5	nw.	W. H. Campbell.
Harrisonville	Cass	912	40	44.1	+ 2.1	73	9 <sup>4</sup>	17	25	41	0.33	— 1.69	0.18	1.5	2	15	6	9	sw.	A. J. Sharp.
Hazelhurst	Livingston	—	20	—	—	—	—	—	—	—	2.21	+ 0.52	1.87	0	4	—	—	—	—	W. H. Baker.
Hermann	Gasconade	482	39	—	—	—	—	—	—	—	1.84	— 1.08	1.26	0	5	17	2	11	w.	C. T. Maushund.
Houston	Texas	1,250	21	45.2	— 0.5	75	10 <sup>4</sup>	12	25	43	1.34	— 1.26	0.84	T.	3	16	11	3	s.	E. Dempsey.
Jefferson City	Cole	628	32	42.7	— 1.4	76	10 <sup>4</sup>	18	15 <sup>4</sup>	45	1.84	— 0.42	1.33	0	5	22	0	8	n.	Miss Emma Swift.
Kansas City	Jackson	963	25	47.2	+ 5.7	73	10	22	24	30	1.90	+ 0.05	1.89	0	3	20	5	5	sw.	U. S. Weather Bureau.
Kidder	Caldwell	1,017	22	45.3	+ 4.1	71	10	20	24 <sup>4</sup>	30	2.27	+ 0.59	1.45	0	3	23	2	5	sw.	J. F. Sharp.
Lamonte	Pettis	863	25	44.8	—	76	11	16	25	39	0.60	— 1.34	0.35	T.	2	25	3	2	s.	J. Ed. Hall.
Lebanon	Laclede	1,265	25	46.0	0	75	11	18	25	30	1.17	— 0.87	0	2	23	4	3	nw.	M. W. Seri.	
Lexington	Lafayette	813	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	J. W. Keithley.
Liberty	Clay	864	25	46.6	+ 3.7	74	10	21	24 <sup>4</sup>	37	1.88	+ 0.16	1.62	T.	4	8	13	9	sw.	W. C. Willmott.
Lockwood	Dade	1,088	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	C. S. Crow.
Marshall	Saline	779	23	45.4	+ 2.8	76	11	17	25	37	0.64	— 1.50	0.46	0.2	2	22	4	4	sw.	Prof. W. H. Black.
Maryville	Nodaway	1,160	23	42.4	+ 4.0	71	10	18	24	37	0.58	— 0.84	0.35	T.	2	23	1	6	s.	J. R. Brink.
Mount Vernon	Lawrence	1,480	35	46.8	— 0.2	75	11	17	25	38	2.87	— 0.07	2.30	T.	3	22	4	4	sw.	J. R. White & Son.
Nevada	Vernon	860	19	—	—	—	—	—	—	—	0.77	— 1.22	0.44	0	2	26	3	1	sw.	C. Jewell.
Oregon	Holt	1,113	58	45.0	+ 4.4	70	10	19	24	32	0.74	— 0.97	0.55	T.	3	21	3	6	sw.	Tom Curry.
Pattersonburg	Daviess	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Wm. Burton.
Rolla	Phelps	1,139	32	46.0	+ 3.0	76	10 <sup>4</sup>	19	25	36	2.12	— 0.42	1.54	0	4	24	2	4	sw.	Prof. P. J. Wilkins.
St. Charles	St. Charles	614	35	47.0	+ 2.3	77	10	20	25	32	1.15	— 1.70	0.87	0	2	26	3	8	nw.	L. C. Sager.
St. Joseph	Buchanan	967	41	45.6	—	72	10	20	24	30	0.32	— 1.								

\* a, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.  
 \*\* Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.  
 † Also on other dates.  
 ‡ All temperature normals for Montana used in this table have been reduced to the 33-year period.  
 T. Precipitation is less than 0.01 inch rain or melted snow.



TABLE 2.—Daily precipitation for November, 1912. District No. 6, Missouri Valley.

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Wyoming.																																	
Arapahoe.....	Bighorn.....																																
Barnum.....	Powder.....																																
Basin.....	Bighorn.....																																0.00
Bennett.....	North Platte.....																																
Big Creek Station.....	do.....																					T.									.02	0.34	
Burns.....	South Platte.....										1.10	.32															.02				.01	1.13	
Casper.....	North Platte.....	.04										.01			.04							.07					.03				.02	0.21	
Centennial.....	do.....			T.				T.	.02			.20									.02											.04	0.33
Cheyenne.....	South Platte.....			T.								.50																					0.58
Chugwater.....	North Platte.....											.50																.08					0.70
Clark.....	Yellowstone.....							T.	.05																								0.06
Cody.....	Bighorn.....											.04														.02						T.	0.06
Crazy Creek.....	Yellowstone.....			.08	.06	.06	.10	T.			.30	.15	.01								T.											0.76	
Dome Lake.....	Tongue.....			.10								.10									.20					.20	.30		.30				1.60
Douglas.....	North Platte.....											.39															T.	T.					0.39
Dubois.....	Bighorn.....			.05								T.				T.					T.												0.05
Eatons Ranch.....	Tongue.....											.20																.15	.20	.10			0.65
Echeta.....	Powder.....																											.15				T.	T.
Elk Mountain.....	North Platte.....											.31										T.	T.					.04				.05	0.35
Encampment.....	do.....					.01	.02	T.				.15	.03															.01				0.27	
Erway.....	Powder.....											.16										.06						.04					0.26
Fort Laramie.....	North Platte.....											.10	.50																				0.60
Foxpark.....	do.....				.04	.01		.01				.44																.05				.02	0.57
Germania.....	Bighorn.....																																0.00
Gillette.....	Powder.....			T.	T.						.15	.02					T.					T.									T.		0.20
Horse Creek.....	Bighorn.....			T.	.05	T.	.05	.09			T.						T.					T.										T.	0.21
Hunters Station.....	Powder.....																																0.23
Hyattville.....	Bighorn.....																																0.00
Jireh.....	Niobrara.....											.48																.06	.04			.06	0.64
Kirtley.....	do.....											.27																.05					0.32
Kirwin.....	Bighorn.....																																
Knowles.....	Cheyenne.....											.06					.02												.03				0.11
Lagrange.....	North Platte.....											.37																	.15				0.52
Lander.....	Bighorn.....											.19																	.01			.12	0.33
Laramie.....	North Platte.....			T.							.72											.01											0.78
Leo.....	do.....				.04																	T.							.05			.09	0.20
Lolabama Ranch.....	Yellowstone.....											.10																					0.10
Lovell.....	do.....											.06																					0.06
Lusk.....	Niobrara.....											.48																					0.00
Manville.....	do.....																										.10	.05				.07	0.70
Moorcroft.....	Cheyenne.....											.01																					0.11
Moore.....	North Platte.....			T.								.05																					0.36
Newcastle.....	Cheyenne.....											T.																	.05				0.10
Pathfinder.....	North Platte.....											.16										T.											0.19
Pinebluff.....	South Platte.....													.48																			0.75
Pine Ridge.....	Cheyenne.....																													.27			0.06
Powell.....	Bighorn.....																										.02			.04			0.00
Rawlins.....	North Platte.....			T.	T.							.33										.03										.15	0.53
Riverton.....	Bighorn.....																																0.00
Rockypoint.....	Powder.....											.02																					0.02
Saratoga.....	North Platte.....											.30																					0.30
Seven Mile Creek.....	do.....				T.							.15	.02																				0.02
Sheridan.....	Tongue.....											.24																					0.09
Shoshone Dam.....	Bighorn.....				T.			T.		T.	.02											T.					.01	.14		.02	.08	.01	0.49
Soldiers Home.....	Powder.....																																0.14
South Pass City.....	North Platte.....					.13		.07	.02		.02	.18										.02										.04	0.48
Sundance.....	Cheyenne.....																																0.20
Thermopolis.....	Bighorn.....																																0.02
Thornton.....	Cheyenne.....																																T.
Ulm.....	Tongue.....	.10						T.				.04																					0.29
Verona.....	do.....											.11																					0.27
Wheatland.....	North Platte.....	.11										.25	.05														.10						0.44
Wheatland.....	do.....											.20																					0.20
Wheatland.....	do.....											.20																					0.20
Woodrock.....	Tongue.....				.08		T.	T.			.09	.64					T.					.04											1.33
Worland.....	Bighorn.....											.09	.64																				0.09
Wynote.....	North Platte.....			T.								.50																					0.50
Yellowstone Park.....	Yellowstone.....	.10	.25	.04	.13	T.		.04	.22		.01	.50		T.	.05							.02									.12	.30	1.28
Fairview Dome.....	do.....																																
Fountain.....	Madison.....			.10	.60	.10	.20				.06						.30															.05	1.41
Gallatin.....	Gallatin.....						.30	.10		.10																						.60	1.40
Grand Canyon.....	Yellowstone.....		.20	T.	T.	T.					.30						.10																0.80
Lake Yellowstone.....	do.....			.45				.50			.40	.65					.20														.08	.40	2.68
Norris.....	Madison.....																																
Riverside.....	do.....			.01					.08					.09																			0.68
Sylvan Pass.....	Bighorn.....		.25	T.			.13				.13			.09		.07																	



TABLE 2.—Daily precipitation for November, 1912. District No. 6—Continued.

[illegible]



TABLE 2.—Daily precipitation for November, 1912. District No. 6—Continued.

[illegible]



TABLE 2.—Daily precipitation for November, 1912. District No. 6—Continued.

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Minnesota.																																	
Pipestone.....	Big Sioux.....																															0.00	
Colorado.																																	
Arriba.....	Republican.....											T.	.05															T.				0.05	
Auldhurst.....	South Platte.....																																
Bennett (near).....	do.....																																
Boulder.....	do.....											.52	.31																.10			0.93	
Burlington.....	Republican.....												.08																.10			0.1	
Cassells.....	South Platte.....											.14					T.				T.						.02					0.1	
Castle Rock.....	do.....										.66	.21					T.				T.							.10				0.97	
Cheesman.....	do.....											T.	T.															T.	T.			T.	
Cheyenne Wells.....	Smoky Hill.....											T.	T.															.10				0.10	
Cope.....	Republican.....																																
Corona  .....	South Platte.....																																
Denver.....	do.....											1.02									.03							.09				1.14	
Edgewater.....	do.....																T.															0.75	
Estes Pk. Fish Hatch.....	do.....			T.			T.				.65						T.				T.	.10							T.			0.59	
Fort Collins.....	do.....			.01								.58																	.05			0.82	
Fort Lupton.....	do.....											.70	.07																T.			0.63	
Fort Morgan.....	do.....				.63																											0.56	
Frances.....	do.....	T.		T.		.03		T.				.25	T.			*	.06				*	.09							T.	.10	.03	0.38	
Frys Ranch.....	do.....			T.		T.						.38																				0.23	
Georgetown  .....	do.....					T.						.13				T.					.05								.04		.01	0.50	
Greeley.....	do.....			T.								.35	.15																T.				
Grover (near).....	do.....											.02																				0.02	
Hartsel.....	do.....											.84	.15				T.												.20	.03		1.22	
Hawthorne.....	do.....																															0.05	
Holyoke (near).....	Republican.....																												.05			0.18	
Idaho Springs.....	South Platte.....											.09	T.				T.				T.	.04							T.	.05			
Julesburg.....	do.....																																
Kersey.....	do.....																																
Laporte.....	do.....			.38							.43																						0.81
Leroy (near).....	Republican.....											T.	.23														T.	.19				0.42	
Longmont  .....	South Platte.....											.57																				0.57	
Longs Peak (near).....	do.....										.67										T.	.13							.10			0.90	
Merino.....	do.....																																
Moraine.....	do.....											.42																				0.42	
Platte Canon.....	do.....											.55	.09																.20	.30		1.14	
St. Cloud.....	do.....																																
Sedgwick.....	do.....												.30																.10			0.40	
Silver Lake.....	do.....																																
Spicer (near).....	North Platte.....																																
Sterling.....	South Platte.....											.28																		.02		0.30	
Waterdale.....	do.....											.45																				0.45	
Wray.....	Republican.....											.04																	.12			0.16	
Yuma.....	do.....												.03																T.			0.03	
Nebraska.																																	
Ainsworth.....	Niobrara.....																															0.00	
Albion.....	Loup.....											1.01																				1.01	
Alliance.....	North Platte.....										.30	.10															T.					0.40	
Alma.....	Republican.....												1.20																			1.20	
Arcadia.....	Loup.....											T.																				T.	
Arden   .....	do.....												.11																			0.11	
Ashland.....	Platte.....											.68																				0.68	
Ashton.....	Loup.....											1.10																				1.10	
Atkinson   .....	Elkhorn.....																															0.00	
Auburn.....	Missouri.....					.03						.29	.06																	T.		0.38	
Beatrice.....	do.....											.39																				0.39	
Beaver City.....	Republican.....											1.30																				1.30	
Bellevue.....	Missouri.....											.46	.04																			0.50	
Benkelman.....	Republican.....																																
Bertrand   .....	do.....																																
Blair.....	Missouri.....											.61																				0.61	
Bloomfield.....	do.....				T.								1.58	.63																		T.	
Bradshaw   .....	Blue.....																															2.21	
Brewster.....	Loup.....																													T.		T.	
Bridgeport.....	North Platte.....											T.																				0.20	
Broken Bow   .....	Loup.....																															0.60	
Bruning.....	Blue.....												.29																			0.29	
Burge.....	Niobrara.....																																
Burwell.....	Loup.....																															0.60	
Butte.....	Niobrara.....																															0.00	
Cairo.....	Platte.....												1.51																			1.51	
Callaway.....	Loup.....											.53																				0.53	
Cambridge.....	Republican.....											1.05																				1.05	
Columbus   .....	Loup.....																																
Crete.....	Blue.....												.45																			0.45	
Culbertson   .....	Republican.....	.10											T.																			0.10	
Cury.....	North Platte.....			T.								.30																				0.30	
Curtis.....	Republican.....												.04																			0.04	



TABLE 2.—Daily precipitation for November, 1912. District No. 6—Continued.

[illegible]



TABLE 2.—Daily precipitation for November, 1912. District No. 6—Continued.

Stations.	Watershed.	Day of month.																														Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Iowa—Continued.																																
Creston	Missouri	T.					.13						.10	.15						T.											T.	0.38
Cumberland	Nodaway												.42																			0.42
Denison	Missouri												.82												T.							0.82
Elliott	Nishnabotna												.31																			0.31
Greenfield	Nodaway					T.							.75																			0.75
Harlan	Nishnabotna	T.										T.	.50											T.								0.50
Inwood	Big Sioux												.04																			0.04
Lake Park	Little Sioux												1.50																			1.50
Lamoni	Grand	.13			.12								.18																			0.43
Larrabee	Little Sioux																															
Le Mars	Floyd												1.10																			1.10
Lenox	Missouri					.15							1.18																			1.33
Leon	Grand	.02				.15							.20																			0.37
Little Sioux	Little Sioux												.98																			0.98
Logan	Missouri												1.04																			1.04
Mount Ayr	Grand					.23							.13	.37																		0.73
Murray	do					.42							.44																			0.86
Northboro	Missouri					.06							1.08	.12																		1.26
Odebolt	Little Sioux												1.70																			1.70
Onawa	Missouri												1.20																			1.20
Pacific Junction	do												.43																			0.43
Rock Rapids	Big Sioux																															T.
Sheldon	Floyd												1.04																			0.00
Sibley	Big Sioux												.03	.20																		1.04
Sioux Center	Floyd												.54																			0.23
Sioux City	Missouri	T.											1.03												T.							0.54
Spencer	Little Sioux												1.15												T.							1.03
Thurman	Missouri												.42																			1.15
Washta	Little Sioux												1.80																			0.42
Kansas.																																
Abilene	Smoky Hill	.08																														0.14
Agricultural College	Kansas					T.							.05	.06																		0.05
Alton	Solomon												.56																			0.56
Atchison	Missouri					.30							.09																			0.39
Beloit	Solomon					T.							.13																			0.13
Blakeman	Republican												.05																			0.19
Blue Rapids	Blue												T.	.13																		0.13
Centralia	do					.02							.25	.02																		0.29
Chapman	Smoky Hill																															
Clay Center	Republican												T.																			T.
Colby	do												.10																			0.30
Concordia	do												.10																			0.10
Densmore	Solomon												2.85																			2.85
Dresden	Republican												.53																			0.60
Ellsworth	Smoky Hill												T.																			T.
Emmett	Kansas					T.							T.																			T.
Enterprise	Smoky Hill																															
Eskridge	Osage					.42	.12						.12																			0.00
Farnsworth	Smoky Hill												.30																			0.66
Fort Scott	Osage	.01				.19	.34						T.																			0.42
Frankfort	Blue					.19							.22																			0.54
Garnett	Osage					.05	.28						T.																			0.41
Goodland	Republican																															0.33
Gove	Smoky Hill																															
Hanover	Blue												.09																			T.
Harrison	Republican												.23																			0.09
Hays	Smoky Hill												.87																			0.23
Hill City	Solomon												2.52																			1.13
Horton	Kansas					T.	.05						.34	.02																		2.52
Hoxie	Solomon												.80																			0.41
Lawrence	Kansas					1.19							.04																			1.15
Leavenworth	Missouri					.52	1.34						.04	.04																		1.23
Lebanon	Solomon												.15																			1.94
Leoti	Smoky Hill											T.	.09																			0.15
Lincoln	Saline												.05																			0.11
Lindsborg	Smoky Hill																															0.05
McCracken	do												.80																			0.00
Minneapolis	Solomon												.10																			1.00
Moran	Osage	.07				.18	.28						T.																			0.10
Natoma	Saline												1.20																			0.53
Norton	Republican																															



TABLE 2.—Daily precipitation for November, 1912. District No. 6—Continued.

Stations.	Watershed.	Day of month.																														Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Missouri.																																
Amoret.	Osage					.13							T.																			0.13
Appleton City.	do.	.12			.20																										.42	0.74
Arthur.	do.	.20				.20							T.																			0.40
Avalon.	Grand.	.20				.70	.67																									1.57
Bethany.	do.																															
Bolivar.	Osage					1.86																										1.86
Boonville II.	Missouri.	.20					.90							.03																		1.13
Brunswick II.	Grand.	.40				1.12																										1.52
Clinton.	Osage					.18																										0.18
Columbia.	Missouri.	.02				1.09	.21						.01															T.		T.		1.33
Crocker.	Gasconade.					1.03	.12																									1.15
Eldon.	Osage	.18				1.58	.20																									1.96
Eldorado Springs.	do.					.84	.33																									1.17
Fayette.	Missouri.					.34	.14						T.															T.				0.48
Fulton.	do.	2.37				1.45	.45																									4.27
Glasgow II.	do.	.42					.64							T.																		1.06
Grant City.	Grand.					.31							.42	.26																		0.99
Harrisonville II.	Osage	.18					.15																									0.33
Hazelhurst.	Grand.					1.87	.11						.13	.10																		2.21
Hermann II.	Missouri.	.42	T.			.06	1.26	.02						.08																		1.84
Houston.	Gasconade.	.05				.84	.45																									1.34
Jefferson City.	Missouri.	.17				.32	1.32	.01						.02																	T.	1.84
Kansas City.	do.					1.82	.07						.01																			1.90
Kidder II.	Grand.	.52				1.45							.30																			2.27
Lamonte.	Missouri.	.35				T.	.25						T.																			0.60
Lebanon.	Osage	.30				.87																										1.17
Lexington II.	Missouri.																															
Liberty.	do.	.20				.77	.85						.06																			1.88
Lockwood.	Osage																															
Marshall.	Missouri.	.18				T.	.46																									0.64
Maryville II.	do.	T.											.23	.35																		0.58
Mount Vernon.	Osage	.04				2.30	.53																								T.	2.87
Nevada.	do.					.44	.33																									0.77
Oregon.	Missouri.			.02		.17							.55															T.				0.74
Pattonsburg II.	Grand.																															
Rolla.	Gasconade.	.23				1.54	.32							.03																		2.12
St. Charles.	Missouri.	.28				.87	T.																									1.15
St. Joseph.	do.					.23						T.	.09																			0.32
St. Louis.	Mississippi.	T.				1.42	.02					T.	.27	T.										T.				T.				1.76
Sublett.	Chariton.	.01				.05							.05																		.05	0.11
Tarkio.	Missouri.				.02									.21																		0.23
Trenton.	Grand.					1.14							.05	.24														T.			T.	1.43
Unionville II.	Chariton.	.15					.55						T.	.35																		1.05
Warrensburg.	Missouri.	.16				.02	.10						T.																		T.	0.28
Warrenton II.	do.	.52				.07	.82	.11						.28																		1.80
Warsaw.	Osage.	.33				.68	.26						T.	.03																		1.30
Wheatland.	do.					1.24	.10																									1.34

\*Precipitation included in that of the next measurement.

†Separate dates of falls not recorded.

‡Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.



TABLE 3.—Maximum and minimum temperatures at selected stations for November, 1912. District No. 6, Missouri Valley.

Date.	Wyoming.																Montana.															
	Basin.		Cheyenne.		Fort Laramie.		Lander.		Newcastle.		Pathfinder.		Sheridan.		Yellowstone Park.		Billings.		Dillon.		Havre.		Helena.		Lewis-town. §§		Malta.					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.				
1....	56	28	42	17	51	19	40	13	40	18	41	21	50	16	38	11	45	18	55	16	54	17	40	17	42	10	51	11				
2....	60	30	48	24	60	16	31	18	45	24	44	31	44	18	41	19	48	22	60	27	52	23	44	25	48	16	52	13				
3....	62	29	45	33	60	23	46	22	50	30	43	35	51	25	39	31	57	30	62	30	52	24	45	32	43	14	55	25				
4....	60	26	49	32	58	25	47	25	46	28	45	31	43	25	35	24	49	26	60	24	42	24	44	31	47	23	38	18				
5....	66	30	45	28	55	21	47	24	50	30	43	23	55	21	33	26	54	25	60	22	52	28	51	33	44	19	52	9				
6....	67	30	54	33	59	29	53	24	50	30	47	29	48	25	38	32	51	26	63	23	59	26	55	35	46	26	53	20				
7....	65	28	55	35	62	40	52	28	55	30	52	34	53	28	40	30	52	34	65	26	49	33	46	32	47	22	53	29				
8....	60	24	51	30	61	32	53	27	65	31	60	37	53	26	43	32	56	25	62	29	57	24	53	28	54	25	50	18				
9....	61	26	65	43	73	29	58	28	60	28	60	33	63	29	51	40	71	33	66	25	63	38	55	41	58	38	67	34				
10....	64	27	63	42	74	36	62	46	65	38	60	44	65	35	44	33	58	32	66	29	48	33	55	34	48	38	55	29				
11....	61	21	46	30	47	15	48	28	50	30	40	26	47	27	39	26	54	33	60	24	50	30	47	34	47	26	52	18				
12....	65	29	42	29	55	29	44	22	52	26	42	26	57	24	36	27	53	30	63	25	53	30	49	33	53	29	54	24				
13....	64	28	52	32	62	30	48	24	55	28	47	31	63	28	44	31	61	34	64	22	62	37	60	34	61	30	62	22				
14....	60	24	59	31	67	28	46	23	60	28	51	34	46	24	46	24	47	26	60	26	50	28	52	36	55	29	40	20				
15....	59	24	45	32	52	30	44	27	48	24	46	26	39	28	37	29	41	26	57	29	41	20	43	31	44	30	38	12				
16....	61	26	41	26	47	19	45	22	45	18	40	26	47	21	44	24	56	20	60	26	54	15	43	27	57	21	52	18				
17....	60	21	59	24	65	11	42	18	48	24	47	22	53	16	45	21	61	32	61	20	61	27	46	27	62	22	54	16				
18....	60	24	62	33	65	18	38	21	51	28	45	33	44	21	46	27	59	33	58	22	62	41	54	34	59	24	64	26				
19....	58	26	59	33	65	20	51	24	55	28	50	33	52	28	43	32	62	37	57	20	63	38	58	38	57	44	57	24				
20....	49	24	44	25	47	25	41	22	45	34	44	30	43	22	36	25	52	30	60	21	47	35	42	32	44	26	55	32				
21....	51	20	45	21	56	12	46	18	48	20	40	22	57	20	35	23	59	28	61	25	53	40	54	35	55	29	55	23				
22....	50	21	55	35	64	20	57	22	55	24	48	26	60	24	39	27	63	41	63	20	53	24	56	43	54	35	55	30				
23....	54	24	52	26	55	19	52	23	50	22	47	27	52	22	42	21	57	22	59	24	46	19	54	40	55	28	43	15				
24....	46	18	52	25	51	20	53	23	45	22	45	21	53	22	41	21	60	28	58	25	48	27	48	38	41	25	45	26				
25....	45	15	42	20	41	25	42	19	36	25	43	18	33	13	33	16	42	28	57	20	37	16	40	29	38	13	38	17				
26....	47	18	29	9	30	15	25	9	30	10	28	11	28	12	28	8	36	21	59	14	32	12	35	18	47	9	33	13				
27....	48	12	45	5	47	0	35	6	41	8	35	-2	36	3	36	6	47	12	56	11	50	9	49	17	49	7	35	8				
28....	45	20	55	26	60	9	53	21	43	24	46	31	39	18	35	20	42	29	58	19	44	25	47	32	34	19	42	21				
29....	50	18	41	17	55	12	46	16	45	26	44	21	35	12	37	21	37	18	55	15	33	17	38	21	40	14	36	11				
30....	44	20	50	22	46	12	46	16	45	24	45	30	39	14	55	15	39	23	57	20	43	15	39	29	38	16	38	14				
Mns..	56.8	23.7	49.7	27.3	56.3	21.3	46.3	22.0	49.1	25.3	46.0	27.1	48.3	21.6	39.4	24.1	52.5	27.4	60.1	22.6	50.3	25.8	48.1	31.2	48.9	23.6	49.1	19.6				

Date.	Montana.				North Dakota.								South Dakota.															
	Miles City.		Poplar.		Berthold Agency.		Bismarck.		Dickinson.		James-town. §§		Williston.		Aberdeen. §§		Ellingson.		Huron.		Kadoka.		Kimball.		Pierre.		Rapid City.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	42	17	57	12	38	9	35	21	29	13	36	20	42	18	44	20	39	16	39	22	48	30	40	24	46	31	49	20
2....	45	18	50	14	38	2	46	14	36	10	55	16	45	21	58	10	49	17	58	12	62	17	63	20	66	26	63	26
3....	49	24	54	22	43	10	40	21	35	10	54	15	53	27	60	21	45	21	56	31	56	28	63	30	54	31	54	30
4....	45	26	44	15	38	13	36	24	32	13	38	18	53	24	51	29	47	24	57	37	56	31	58	36	58	36	56	30
5....	53	27	47	14	37	24	40	22	40	19	37	15	45	26	57	19	50	28	56	29	58	26	56	29	58	33	57	28
6....	52	33	66	23	47	15	55	27	46	21	60	25	51	29	54	20	57	33	60	24	58	26	60	28	59	28	57	28
7....	51	36	70	31	44	25	48	30	41	28	48	27	50	33	55	22	51	31	62	28	60	38	63	34	59	34	56	29
8....	53	30	50	23	42	22	49	30	40	20	47	28	48	28	57	23	51	28	53	29	55	29	54	29	54	38	53	27
9....	60	37	69	33	54	27	55	30	47	27	54	25	67	36	58	28	60	32	60	29	78	36	66	30	62	33	69	33
10....	58	33	61	21	45	25	58	30	46	28	59	25	46	25	70	30	68	31	74	34	74	44	77	37	71	36	71	42
11....	52	37	58	21	35	25	39	29	35	26	46	22	46	28	46	28	52	30	46	31	65	33	62	31	48	33	47	37
12....	57	32	55	24	36	21	42	23	47	19	38	23	53	22	43	24	55	24	40	25	56	26	55	26	51	22	57	32
13....	60	33	60	26	38	20	34	25	48	26	31	22	53	26	53	19	56	21	46	21	60	30	53	28	56	30	62	37
14....	57	32	61	22	46	24	47	24	50	23	41	26	57	27	46	27	57	27	42	27	64	24	44	18	53	25	63	36
15....	44	35	46	31	38	27	39	25	43	31	40	25	41	26	42	23	43	29	47	27	51	.....	53	24	50	25	57	25
16....	50	44	51	14	44	20	48	23	44	19	46	25	45	20	50	20	47	19	49	24	46	24	48	22	50	27	49	20
17....	57	30	50	23	54	21	56	27	54	29	54	24	55	28	62	15	59	30	60	19	61	26	55	26	62	25	61	25
18....	58	32	52	23	55	23	57	31	54	29	57	27	58	31	63	26	58	34	59	22	65	27	58	28				



TABLE 3.—Maximum and minimum temperatures at selected stations for November, 1912. District No. 6—Continued.

Date.	South Dakota.						Colorado.						Nebraska.																	
	Sioux Falls. §§		Water- town. §§		Yankton.		Denver.		Wray.		Alma.		Bridge- port.		Grand Island. §§		Hay Springs.		Hebron.		Lincoln.		North Platte.		Oakdale.		Omaha.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1.....	42	26	35	20	36	24	52	22	48	28	45	24	45	18	42	30	40	12	42	31	40	27	48	25	38	18	36	30		
2.....	48	20	57	12	60	19	56	32	64	18	50	15	57	15	59	20	40	15	57	22	58	25	62	23	57	14	56	26		
3.....	53	17	53	12	60	36	50	37	60	23	65	28	52	24	62	35	48	15	61	36	61	38	54	28	60	28	58	36		
4.....	55	28	56	30	60	40	54	34	62	28	67	35	60	24	66	44	54	28	67	43	66	41	63	33	62	35	65	41		
5.....	54	29	56	27	57	33	53	31	55	36	60	35	52	25	58	40	54	24	58	37	58	40	56	32	56	28	58	44		
6.....	60	29	62	25	63	28	64	31	66	22	60	35	63	23	63	26	55	23	62	26	61	29	61	24	60	20	60	33		
7.....	61	30	63	25	69	40	67	36	70	23	74	24	63	30	72	35	62	34	73	37	71	44	68	30	70	38	66	44		
8.....	62	32	62	29	65	34	65	33	64	26	65	35	60	24	62	38	55	28	64	37	61	38	57	31	57	29	59	41		
9.....	67	33	64	24	68	32	74	36	79	27	73	35	76	25	69	44	71	31	72	38	70	37	76	35	68	27	69	42		
10.....	73	35	70	33	77	36	70	46	80	34	78	34	68	30	77	39	72	39	71	43	69	46	77	33	76	35	69	48		
11.....	48	37	48	34	57	35	50	32	62	42	68	35	56	27	55	45	52	32	70	50	68	45	54	40	49	36	48	46		
12.....	40	30	40	26	39	29	49	26	52	33	48	31	.....	.....	45	31	52	25	50	36	45	34	53	33	43	28	46	35		
13.....	53	20	43	17	54	23	60	30	62	28	64	31	60	27	61	33	58	31	61	28	59	32	64	29	58	25	55	30		
14.....	52	29	35	25	37	23	65	34	68	22	54	24	64	21	44	27	63	25	44	30	44	29	64	26	37	21	34	30		
15.....	53	25	45	24	55	28	52	32	60	22	57	25	56	25	57	30	55	28	60	26	57	31	61	27	57	25	53	31		
16.....	55	26	46	23	50	28	42	26	45	22	49	25	47	24	48	31	45	18	50	36	50	31	47	23	48	24	49	36		
17.....	56	22	53	21	64	28	60	25	62	17	55	17	60	17	55	28	61	20	56	21	55	29	61	20	60	20	54	32		
18.....	62	23	59	22	70	22	62	35	67	23	55	22	64	19	60	31	60	23	64	28	63	34	68	25	62	24	63	36		
19.....	61	25	63	24	65	29	63	31	72	20	64	21	65	16	53	30	62	20	65	26	62	32	69	22	62	29	62	36		
20.....	58	26	57	25	58	29	54	32	60	20	64	19	51	23	60	31	50	32	60	37	59	40	62	25	59	28	59	42		
21.....	56	29	52	21	56	29	55	26	52	18	54	18	54	14	54	28	52	19	54	26	54	31	55	21	54	24	53	34		
22.....	55	26	54	21	63	31	63	35	70	23	65	20	62	22	61	28	60	26	63	28	63	31	64	27	61	23	59	33		
23.....	42	24	35	23	43	17	53	29	60	21	54	27	56	19	47	27	52	22	47	29	50	26	55	22	45	20	52	22		
24.....	41	11	29	10	32	11	49	26	47	20	46	15	54	20	49	13	50	15	34	16	34	16	40	16	31	7	34	18		
25.....	40	17	37	15	44	30	40	25	47	22	49	20	41	25	47	25	40	24	48	24	46	24	44	20	44	23	44	26		
26.....	41	15	33	16	37	22	31	10	37	23	41	15	34	20	38	23	32	12	40	21	40	24	35	19	38	20	40	26		
27.....	47	16	29	14	36	22	51	7	39	3	41	18	37	.....	40	26	42	.....	40	22	40	22	40	14	37	17	37	24		
28.....	50	20	47	18	50	26	57	39	62	22	60	17	40	19	53	24	46	22	49	24	48	26	58	22	53	19	45	26		
29.....	51	22	43	18	47	30	48	28	49	20	53	21	47	14	50	23	46	20	52	24	52	28	50	20	48	22	51	30		
30.....	52	30	48	21	52	32	60	29	56	18	58	24	50	17	54	28	55	20	56	26	56	31	48	24	51	29	53	34		
Mns.....	52.9	25.1	49.1	21.8	53.5	28.2	55.6	29.8	59.2	23.2	57.9	24.8	55.0	20.9	55.4	30.4	52.8	22.7	56.3	30.3	55.3	32.0	57.1	25.6	53.4	24.5	53.6	33.7		

Date.	Nebraska.		Iowa.				Kansas.								Missouri.											
	Valentine.		Clarinda. §§		Sibley. §§		Sioux City.		Colby.		Concordia.		Salina.		Topeka.		Wakeeney.		Columbia.		Kansas City.		St. Louis.		Union- ville. §§	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	46	20	39	31	33	25	34	25	41	22	41	30	.....	29	36	27	40	26	39	29	36	29	44	34	34	30
2.....	64	17	56	17	54	13	56	24	60	21	57	27	.....	25	53	26	49	20	48	24	52	27	43	30	48	20
3.....	57	30	60	18	59	22	61	33	60	24	59	40	.....	34	55	36	69	37	57	32	56	34	54	33	55	22
4.....	58	31	65	30	60	30	59	37	65	32	67	46	.....	40	67	45	66	38	65	46	65	47	64	46	60	30
5.....	55	27	54	35	57	31	57	33	56	31	57	43	.....	44	62	48	59	37	58	51	65	49	59	49	56	44
6.....	60	29	56	32	59	22	59	24	64	28	62	33	.....	60	40	66	26	58	35	58	44	58	46	55	45	
7.....	64	34	65	32	54	26	70	43	72	32	74	43	.....	41	67	39	75	38	60	31	64	44	57	40	58	34
8.....	56	28	50	35	.....	27	55	33	62	32	65	43	.....	38	65	44	68	40	64	39	64	47	63	48	55	36
9.....	72	40	65	27	68	.....	65	33	75	35	76	46	.....	35	72	40	76	39	68	34	72	44	63	44	60	31
10.....	76	40	70	37	74	33	69	39	83	36	74	51	.....	74	54	83	38	75	57	73	56	76	53	70	36	
11.....	55	35	69	44	47	33	55	42	65	43	70	57	.....	49	69	58	76	54	75	60	68	60	76	58	72	50
12.....	52	30	57	52	36	32	42	30	55	35	59	38	.....	32	64	37	67	32	72	44	63	40	72	50	58	55
13.....	61	26	57	28	50	19	53	28	64	30	62	34	.....	28	62	34	62	35	53	41	58	34	52	42	50	38
14.....	63	23	50	29	32	29	32	30	67	36	46	33	.....	27	53	31	61	31	44	27	51	32	45	37	53	30
15.....	54	28	55	25	42	26	52	30	62	26	65	28	.....	28	61	29	63	30	53	34	59	30	49	32	50	24
16.....	47	22	50	28	48	26	49	31	47	24	51	31	.....	26	52	35	48	31	48	34	51	36	53	38	48	26
17.....	62	26	54	22	53	21	56	28	62	22	55	28	.....	16	55	28	58	23	52	26	53	34	52	33	50	24
18.....	65	26	62	22	59	25	58	29	70	26	67	36	.....	25	68	34	71	30	63	32	67	38	62	37	60	28
19.....	66	26	64	27	58	24	58	31	71	26	69	31	.....	20	68	36	66	31	65	43	67	42	67	47	64	33
20.....	54																									



## CLIMATOLOGICAL DATA FOR NOVEMBER, 1912.

## DISTRICT No. 7, LOWER MISSISSIPPI VALLEY.

ISAAC M. CLINE, District Editor.

## GENERAL SUMMARY.

Moderate temperature conditions prevailed generally until the 27th, when a cool wave overspread the district, giving temperatures below freezing nearly to the Gulf coast in Louisiana. The precipitation was light and scattered, and there were no well-defined rainy periods, except in Arkansas and in the Missouri area where the precipitation nearly all occurred during the first 6 days of the month. The weather was generally favorable for all outdoor occupations.

The following table summarizes the chief features of meteorological interest in the various portions of the district:

States and portions of States lying within District No. 7.	Mean temperature.	Departure from normal.	Mean precipitation.	Departure from normal.	Greatest precipitation in 24 hours.	Mean snowfall.	Number of days.				Prevailing wind direction.
							With 0.01 or more.	Clear.	Partly cloudy.	Cloudy.	
Colorado.....	38.3	+0.9	0.22	-0.44	.65	1.7	2	21	7	2	W.
New Mexico.....	41.8	-0.4	0.07	-0.53	.94	0.7	0	23	6	1	SW.
Texas.....	49.9	-0.2	0.40	-1.62	1.30	0.5	1	22	4	4	W.
Kansas.....	46.1	+1.8	0.39	-0.78	1.66	0.6	2	21	5	2	W.
Oklahoma.....	49.6	-0.5	0.62	-1.43	1.96	T.	2	22	3	3	W.
Missouri.....	47.0	+0.6	1.85	-1.08	2.30	T.	3	22	4	4	W.
Tennessee.....	47.7	-2.0	1.16	-3.63	1.50	T.	3	19	3	2	NW.
Arkansas.....	50.5	-0.2	1.66	-2.07	2.93	T.	2	19	7	4	SW.
Mississippi.....	51.4	-2.9	1.21	-2.42	1.10	0.2	4	20	4	6	N.
Louisiana.....	55.4	-3.1	1.22	-2.26	2.29	T.	2	17	6	7	N.

## TEMPERATURE.

Mean temperatures ranged from 0.2° to 6.4° below the normal in Louisiana, the Mississippi, Tennessee, and New Mexico areas, southern Arkansas, and over east-central, southern, and extreme western Oklahoma; elsewhere there was an excess ranging from 0.3° to 4.5°. No great extremes of temperature were experienced. Below zero readings were reported from 6 stations in the Colorado area and 7 stations in the New Mexico area; elsewhere the lowest readings were well above zero. The highest temperature recorded, 91°, occurred at Reserve, La., and the lowest, -6°, was reported from Elizabethtown, N. Mex. Minimum readings of -4° were reported from Santa Clara and Lake Moraine, Colo.

## PRECIPITATION BY DRAINAGE AREAS.

*Arkansas River and tributaries.*—The precipitation was unevenly distributed over this drainage area. In Colorado the average from 33 stations was 0.20 inch, about one-half inch below the normal. Over those portions of the Arkansas Valley proper that lie in Kansas and Oklahoma the average from 40 stations was 0.46 inch, about 0.8 inch below the normal. Over that portion of the Canadian Valley lying in New Mexico 26 stations reported no precipitation during the month, and the average from 36 stations was only 0.05 inch, about 0.7 inch below the normal. Over those portions of the Canadian Valley lying in Texas and Oklahoma the precipitation was somewhat heavier, the average from 25 stations being 0.57 inch, about 1.4 inches below the normal. The amounts from 20 stations in the Cimarron Valley aver-

aged 0.22 inch, about 1.1 inches below the normal. Over the Verdigris Valley the precipitation was light, the average from 10 stations being 0.52 inch, about 1.2 inches below the normal. Over the Neosho Valley the precipitation was somewhat heavier, the average from 17 stations being 1.13 inches, about 0.8 inch below the normal. Below the Oklahoma-Arkansas line the precipitation over the Arkansas Valley proper was very light, the average from 13 stations being 1.55 inches, about 2 inches below the normal.

*Red River and tributaries.*—Less than the normal precipitation occurred in all parts of this drainage area. Over those portions of the Red River Valley that lie in New Mexico, Texas, and Oklahoma, the average from 40 stations was 0.46 inch, about 1.6 inches below the normal. Below the Texas-Arkansas line, the average from 19 stations was 0.78 inch, about 3.1 inches below the normal.

*Mississippi River south of St. Louis and small tributaries.*—The precipitation was unevenly distributed over this drainage area, and there was a deficiency in all portions. In the immediate Mississippi Valley, the amounts from 37 stations averaged 1.48 inches, about 2.4 inches below the normal. The average from 21 stations in the Valley of the White River was 2.22 inches, about 1.5 inches below the normal. Over the Yazoo Valley the average from 22 stations was 1.20 inches, about 2.5 inches below the normal. The average from 4 stations in the Valley of the Big Black was 1.30 inches, about 1.6 inches below the normal. In the Ouachita Valley the average from 19 stations was 1.11 inches, about 2.9 inches below the normal.

*Louisiana coastal plain.*—The precipitation was light throughout this drainage area, the average from 35 stations being 1.48 inches, about 1.7 inches below the normal.

## SNOWFALL.

Snow occurred generally in the Colorado area, and in parts of the New Mexico, Kansas, and northern portion of the Mississippi areas, and in northern and western Oklahoma, but the amounts were very light. A trace occurred at scattered stations in other portions of the district. The snowfall in the mountainous portions of the Colorado and New Mexico areas was very deficient, and there was probably less snow stored in the mountains at the close than at the opening of the month, owing to the prevalence of warm weather.

## RIVERS.

All rivers in Oklahoma continued below the normal stage, and no decided changes were reported.

In the Kansas area the rivers continued at low stages. In Arkansas the Black, White, and Arkansas Rivers continued unusually low, and the Arkansas was navigable only from the 7th to 17th.

Changes in the Mississippi below St. Louis were slight and unimportant, and low stages prevailed generally.

The Ouachita rose from the 4th to 10th, when a stage of 10.5 feet was recorded at Camden, Ark., after which there was a steady fall, the lowest stage of the month, 4 feet, being reached at Camden on the 30th.



TABLE 1.—*Climatological data for November, 1912. District No. 7, Lower Mississippi Valley.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total annual, unmelting.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Colorado.																				
Buena Vista.	Chaffee.	7,955	12	29.2	- 3.3	50	107	0	26	45	T.	- 0.43	T.	0	0	22	4	4	nw.	C. A. Short.
Calhan.	El Paso.	6,700	5																	H. B. Rice.
Canon City.	Fremont.	5,343	24	46.9	+ 4.5	74	97	14	27	42	T.	- 0.47	T.	0	0	25	3	2	ne.	U. S. Weather Bureau.
Colorado Springs.	El Paso.	6,098	32	38.4	+ 0.9	67	9	- 2	27	40	0.02	- 0.32	0.01	0.2	2	19	7	4	n.	Colorado College.
Cripple Creek.	Teller.	9,396	11								0.09	- 0.33	0.09	1.3	1					F. G. Willis.
Cuchara Camps.	Huerfano.	8,200	3								0.44		0.21	5.8	3	28	2	0	sw.	George A. Mayes.
Ends.	Kiowa.	4,209	5								T.		T.	0	0	20	8	2	w.	Mrs. Mattie A. Kerr.
Fairview.	Custer.	9,500	3								0.43		0.28	6.0	2	19	11	0	e.	Elizabeth L. Gray.
Fremont Exper. Sta.	El Paso.	8,850	2	33.9		60	9	- 2	26	49	0.17		0.16	3.3	2	14	11	5	w.	U. S. Forest Service.
Garfield.	Chaffee.	9,510	2								0.46		0.37	4.5	4	20	6	4	w.	Lloyd N. Felton.
Hamp.	Elbert.	5,400	19	38.5	+ 2.4	75	9	- 2	27	54	0.12	- 0.12	0.12	1.3	2	21	5	4	n.	W. Hamp.
Hermit Lake.	Custer.	10,000	2								0.26		0.16	4.0	2	25	5	0	sw.	John E. Graham.
Hoehe (near).	Las Animas.	5,700	20	42.6	+ 0.8	78	9	0	27	52	0.38	- 0.27	0.35	T.	2	22	8	0	w.	S. W. De Busk.
Holly.	Prowers.	3,380	17	42.6	- 0.2	62	8	20	28	34	0.75	- 0.12	0.50	T.	1	26	2	2	n.	Holly Sugar Co.
Lake Moraine.	El Paso.	10,265	18	29.8	+ 0.6	52	97	4	27	43	0.17	- 0.68	0.12	4.0	2	14	10	6	sw.	Clyde C. McReynolds.
Lamar.	Prowers.	3,592	22	43.1	+ 0.8	78	9	9	27	47	0.10	- 0.37	0.10	1.0	1	28	2	0	ne.	J. T. Lawless.
Las Animas.	Bent.	3,899	44																	F. M. Tague.
La Veta Pass.	Costilla.	9,000	2								0.11		0.11	2.0	1	23	5	2	w.	Clara M. Wright.
Leadville.	Lake.	10,248	16	27.3	+ 0.2	55	18	- 2	1	43	0.21	- 0.55	0.20	4.9	2	15	12	3	n.	U. S. Weather Bureau.
Limon (near).	Elbert.	5,360	5	38.7		73	9	- 1	27	56	0.12		0.12	0.2	2	22	4	4	s.	F. L. Palmer.
Madrid.	Las Animas.		2								0.09		0.08	1.0	3					Thos. Sawers.
Marshall Pass.	Saguache.	10,846	9								0.59		0.38	6.0	2	19	7	4		W. L. Williams.
Maxey.	Baca.										0.65		0.65	T.	1	21	8	1	sw.	L. H. Alberti.
Monument.	El Paso.	7,200	1																	U. S. Forest Service.
North Lake.	Las Animas.	8,700	20								0.07	- 1.16	0.04	0.5	2	25	4	1	nw.	James W. Ingmire.
Pueblo.	Pueblo.	4,734	24	41.5	+ 2.2	77	9	8	27	57	T.	- 0.37	T.	0	0	20	10	0	nw.	U. S. Weather Bureau.
Rocky Ford (near).	Otero.	4,177	23	41.5	+ 1.7	78	9	11	27	56	0.00	- 0.48	0.00	0	0	26	2	2	w.	P. K. Blinn.
St. Elmo.	Chaffee.	9,500	3								0.16		0.13	2.5	2	23	5	2	sw.	Daniel Clark.
Salida.	do.	7,035	13	34.4	- 2.9	63	97	3	27	50	0.15	- 0.57	0.15	T.	1	27	3	0	n.	M. D. L. Buell.
Santa Clara.	Huerfano.	8,252	17	39.6	+ 3.7	71	9	- 4	27	42	0.36	- 0.66	0.14	2.8	3	17	13	0		Lincoln G. Morris.
Sheridan Lake.	Kiowa.	4,065	10								0.00		0.00	0	0	19	4	7	e.	Howard Gamble.
Stonewall.	Las Animas.	8,000	6								0.00		0.00	0	0	21	8	1	w.	G. A. Story.
Trinidad.	do.	5,994	16	42.2		75	9	0	27	45	0.63	- 0.26	0.36	1.0	3	21	8	1	sw.	Walter Dearden.
Two Buttes.	Baca.	4,100	1	45.9		82	9	10	27	47	0.35		0.25	1.0	2	14	16	0	sw.	N. G. Jones.
Two Buttes Reservoir.	do.										0.47		0.45	0.5	2				nw.	W. J. Krohne.
Victor.	Teller.	10,100	8	34.1		52	18	6	27	30	T.		T.	0	0	28	2	0	w.	Fred Jones.
Vilas.	Baca.	3,935	21								0.00	- 0.57	0.00	0	0	25	5	0	sw.	Carrie Konkel.
Wayne.	El Paso.		1																	J. C. Groff.
Westcliffe.	Custer.	7,864	18	35.2	+ 2.6	66	9	- 3	27	58	0.03	- 0.85	0.03	1.0	1	15	10	5	nw.	Zack Jordan.
Winfield.	Chaffee.	9,765	2								0.14		0.14	2.8	5	13	12	5	w.	John G. Payne.
Woodman Sanatorium.	El Paso.		1	41.4		70	9	2	27	41	0.46		0.20	2.5	5	23	6	1	nw.	Dr. J. E. White.
Wortman.	Lake.	11,250	11																	Geo. C. Wortman.
New Mexico.																				
Abbott.	Mora.	5,771	3			75	97				0.00		0.00	0	0	27	3	0	w.	Agent E. P. & S. W. R. R.
Albert.	Union.	4,700	22	45.8	- 0.8	83	13	12	30	64	0.00	- 0.67	0.00	0	0	30	0	0	w.	Martin De Smet.
Aurora.	Colfax.	8,849	3								0.10		0.06	1.6	2	12	16	2	nw.	Miss J. Lucero.
Bell Ranch.	San Miguel.	4,500	13	44.4		82	9	9	27	58	0.00	- 0.95	0.00	0	0	19	8	3	sw	C. M. O'Donel.
Black Lake.	Colfax.	8,348	3								0.36		0.29	3.9	2	16	12	2	sw	Ralph T. Martinez.
Cabeza.	San Miguel.	5,406	3			70	77				0.00		0.00	0	0	24	6	0	sw.	Agent E. P. & S. W. R. R.
Campana.	do.	4,493	3	46.6		80	9	12	27	44	0.00		0.00	0	0	24	4	2	sw.	Do.
Chacon.	Mora.	9,000	3								0.00		0.00	0	0	15	14	1	w.	Alfredo Lucero.
Cimarron (near).	Colfax.	6,385	8	40.7		75	9	4	27	57	0.00		0.00	0	0	22	4	4	e.	William French.
Clovis.	Curry.	4,129	1	46.7		75	7	12	16	46	0.00		0.00	0	0				sw.	John H. Barry.
Cuervo.	Guadalupe.	4,849	3	46.2		75	9	25	21	35	0.00		0.00	0	0	26	1	3	sw.	Agent E. P. & S. W. R. R.
Dawson.	Colfax.	6,396	3	38.6		74	8	6	27	46	0.00		0.00	0	0	20	10	0	sw.	Do.
Elizabethtown.	do.	8,465	7	30.2		61	9	- 6	27	59	0.22		0.22	3.0	1	23	5	2	nw.	Miss M. Carrington.
Folsom.	Union.	6,399	12	40.5	+ 1.2	74	9	- 1	27	46	0.99	+ 0.07	0.94	4.0	2	27	3	0	sw.	David Rope.
Fort Union.	Mora.	6,835	52	39.2	- 1.2	74	9	- 2	27	54	0.00	- 0.68	0.00	0	0	29	0	1	w.	M. C. Needham.
Hayden.	Union.	4,444	2	43.8	- 1.2	76	10	8	27	46	0.03		0.00	0	1	22	7	1	sw.	James B. Dickson.
Hoosier Ranch.	Mora.		1								0.00		0.00	0	0	21	9	0	sw.	W. H. Guthman.
Johnsons Park.	Colfax.	6,722	3								0.04		0.04	0.5	1	21	7	2	sw.	A. J. Meloche, jr.
Johnsons Ranch.	Mora.	5,784									0.00		0.00	0	0	30	0	0	sw.	J. W. Johnson.
Kappus.	Quay.	4,010	1								T.		T.	0	0					Anthony Kappus.
Lake Alice.	Colfax.	7,160	3								0.55		0.36	9.0	2	12	18	0		Jesse Rickman.
Logan.	Quay.	3,851	6	45.2		83	8	8	27	55	0.00		0.00	0	0	28	1	1	sw.	John B. Reneau.
Lykins (near).	Roosevelt.	5,000	2								0.00		0.00	0	0	28	1	1	sw.	J. G. Buchanan.
Maxwell (near).	Colfax.	5,894	5								0.00		0.00	0	0					Dan N. Jackson.
Melrose.	Curry.	4,400	4								0.00		0.00	0	0					Dr. B. M. Porter.
Miami Ranch.	Colfax.	6,000	4	39.6		73	9	1	27	54	0.00		0.00	0	0	24	6	0	s.	Farmers Development Co.
Mills (near).	Mora.	5,985	1								0.00		0.00	0	0	28	1	1	sw.	J. E. La Rue.
Montoya.	Quay.	4,335	3			77	97				0.00		0.00	0	0	27	1	2	w.	Agent E. P. & S. W. R. R.
Mount Dora (near).	Union.	5,600	1								0.00		0.00	0	0					Edwd. F. Gyrgla.
Nara Viss.	Quay.	4,225	6								0.00		0.00	0	0	30	0	0		Willard Belknap.
Palo Verde.	Mora.	5,880	1								0.00		0.00	0	0	27	2	1	w.	G. R. Abernathy.
Pasamonte.	Union.		3								0.00		0.00	0	0					J. J. Heringa.
Pleasant View.	Mora.		1								0.00		0.00	0	0					R. W. Boulware.
Portales.	Roosevelt.	4,004	2								0.00		0.00	0	0	24	6	0	s.	Portales Irrigation Co.
Raton.	Colfax.	6,660	14	40.3	- 1.0	75	10	- 1	26	54	T.	- 0.41	T.	T.	0	23	7	0	nw.	Humphrey & Wiseman.
Rociada.	San Miguel.	8,200	8	35.8		68	9	1	27	51	0.34		0.18	3.5	2	17	12	1	w.	J. Ernest Dailey.
Rosebud.	Union.	4,500	1								0.00		0.00	0	0					H. A. Nachtrieb.
Roy.	Mora.	5,884	3								0.00		0.00	0	0	17	13	0	ne.	Agent E. P. & S. W. R. R.
Roy (near).	do.	5,880	1								0.00		0.00	0	0	26	4	0	sw.	Baum Bros.
St. Vrain (near).	Curry.	4,300									0.00		0.00	0	0					S. A. Dow.
San Jon.	Quay.	4,200	5	46.8		78	9	10	27	53	0.00		0.00	0	0	28	1	1	sw.	Jesse T. White.
Solano.	Mora.	5,622	3	43.4		74	9	6	27	48	0.00		0.00	0	0	28	1	1	sw.	F. M. Hughes.
Springer.	Colfax.	5,857	20								0.00		0.00	0	0					Agent A. T. & S. F. R. R.
Taylor.	Mora.	5,661	3								0.00		0.00	0	0	22	8	0	w.	Agent E. P. & S. W. R. R.
Texico (near).	Roosevelt.	4,038									0.00		0.00	0	0					



TABLE 1.—Climatological data for November, 1912. District No. 7—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of overcast days.		
Texas.																				
Amarillo	Potter	3,676	20	46.9	+ 3.1	78	10	13	27	42	0.02	- 1.14	0.02	0.2	1	23	6	1	sw.	U. S. Weather Bureau.
Archer City	Archer	590	20	53.9		79	8	24	28	42	0.72	- 2.43	0.45	0	2	23	7	0	s.	Charles H. Thurman.
Arthur City	Lamar	590	20								0.40		0.40	0	1	18	0	12		C. A. Lowrey.
Bonham	Fannin	566	9								0.83		0.77	0	2	24	1	5	s.	H. M. Norman.
Canadian	Hemphill	2,339	5																	J. M. Shaw.
Childress	Childress	1,869	19																	George Baker.
Chillicothe	Hardeman	1,406	4								0.10		0.10	0	1					A. B. Connor.
Clarendon	Donley	2,719	7	48.4		82	10	19	27†	49	0.04		0.04	T.	1	23	7	0	nw.	Whitfield Carhart.
Clarksburg	Red River	442	12	54.2	- 2.1	80	6†	30	30	38†	1.30	- 2.16	1.30	0	1	20	2	3		J. W. O'Neill.
Claude	Armstrong	3,397	7								0.02		0.02	0.2	1					Ft. W. & D. C. Ry.
Dalhart	Dallam	3,998	7	42.6		79	9	7	27	59	0.00		0.00	0	0					W. D. Griggs.
Denison	Grayson		12								0.95	- 1.60	0.70	0	2	19	3	8	n.	J. L. Wilson.
Finley	Bowie		2								1.00		1.00	0	1	23	0	7	n.	Robert L. Smith.
Henrietta	Clay	915	20	53.9	+ 1.8	80	11	27	26	39	0.70	- 1.38	0.35	0	2	25	1	4	s.	C. K. Brown.
Memphis	Hall	2,067	7	49.1		75	9	30	27†	32	0.00		0.00	0	0	29	0	1		Ft. W. & D. C. Ry.
Miami	Roberts	2,743	6	49.2		80	10	12	27	47	0.20		0.20	2.0	1	26	1	3	s.	J. E. Kinney.
Ochiltree	Ochiltree		4																	S. J. Allen.
Panhandle	Carson	3,450	3																	J. Sid O'Keefe.
Paris	Lamar	592	23	51.9	- 2.9	79	11	21	28	40	0.79	- 2.05	0.65	0	2	18	2	10	n.	Robert A. Miller.
Plemons	Hutchinson		5	44.0		82	10	8	27	54	0.09		0.09	1.0	1	28	0	2	s.	C. S. Solomon.
Quanah	Hardeman	1,563	10	48.8		77	10	28	2†	39	0.00	- 1.28	0.00	0	0	14	15	1	n.	William H. Crawford.
Ringo Crossing	Hopkins		2								0.75		0.50	0	2	17	4	9	n.	H. J. Palmer.
Romero	Hartley		2	61.1		80	9	10	27	50	T.		T.	T.	0	24	6	0	s.	R. S. Chamberlain.
Sherman	Grayson	745	19	53.8	+ 0.2	76	11	31	2	33	1.18	- 1.35	0.61	0	3	18	6	6	n.	R. A. Gibbs.
Stratford	Sherman	3,699	7	44.2		83	11	7	27	54	0.10		0.10	1.0	1	26	2	2	s.	J. W. Elliott.
Texline	Dallam	4,964	7																	Ft. W. & D. C. Ry.
Tulia	Swisher	3,501	14	46.6	- 1.5	80	10	14	27	51	T.	- 1.80	T.	T.	0	22	6	2	sw.	Lou Mulhall.
Wellington	Collingsworth										0.17		0.15	0.2	2					J. D. Camp.
Wichita Falls	Wichita	958	20								0.17		0.17	0	1	15	15	0	nw.	E. F. Mittmann.
Winfield	Titus		2																	J. B. Newberry.
Kansas.																				
Alden	Rice	1,684	2								T.		T.	T.	0	24	3	3	nw.	L. B. Wait.
Anthony	Harper	1,329	15	48.6		80	10	18	25	45	0.09	- 0.89	0.07	0.5	2	21	8	1	sw.	R. H. Beebe.
Ashland	Clark	1,951	24	47.6	+ 4.3	86	10	11	28	54	0.21	- 0.60	0.16	0.2	3	26	2	2	s.	C. W. Carson.
Burlington	Coffey	1,010	19	45.4	+ 1.1	74	9	17	25	45	0.19	- 1.12	0.19	0	1	4	23	3	s.	O. E. Sanford.
Chanute	Neosho	940	8	47.6		76	10	22	2	41	1.28		0.95	0	2	0	29	1	sw.	C. W. Brown.
Cimarron	Gray	2,700									0.25		0.25	2.5	2	2†	3†	2†	s.	C. C. Isely.
Coffeyville	Montgomery	747	2								0.47		0.47	T.	1	17	7	6	s.	A. F. Briggs.
Coldwater	Comanche	2,090	15	47.0	+ 3.2	82	10	16	27	45	0.03	- 0.70	0.03	1.0	1	26	1	3	s.	J. L. Stanley.
Columbus	Cherokee	898	22	46.2	+ 0.7	72	10†	19	25	33	1.26	- 1.07	0.65	0	3	24	4	2	sw.	O. E. Skinner.
Coolidge	Hamilton	3,348	15	41.5	+ 1.4	83	10	4	27	56	0.35	- 0.19	0.30	0.5	2	23	7	0	se.	W. R. Padley.
Cottonwood Falls	Chase	1,234	8	46.4		75	9	18	25	41	0.28		0.16	0	2	22	4	4	s.	E. B. Greene.
Council Grove	Morris	1,234	3	46.8		74	9	18	24	38	1.14		1.10	0	2	20	6	4	s.	J. P. Blackledge.
Cunningham	Kingman	1,680	28	46.5	+ 0.3	80	10	16	27	48	0.27	- 0.56	0.17	1.8	2	18	10	2	s.	W. H. Mortledge.
Dodge City	Ford	2,513	38	45.0	+ 4.5	81	9	14	27	45	0.26	- 0.29	0.21	0.5	2	21	7	2	s.	U. S. Weather Bureau.
Eldorado	Butler	1,291	10	46.4		74	9	19	25	39	0.13		0.13	0	1	25	3	2	s.	W. V. Miller.
Ellinwood	Barton	1,790	37	46.1	+ 3.7	79	10	14	27	47	0.21	- 0.64	0.11	1.0	2	14	15	1	sw.	Martin Musil.
Emporia	Lyon	1,138	31	46.6	+ 2.9	75	9†	19	24	38	0.68	- 0.61	0.58	0	2	19	9	2	sw.	W. H. Boyles.
Eureka	Greenwood	1,079	16	44.8		76	10	18	25	44	0.15	- 1.65	0.15		1	21	4	5	sw.	Mrs. T. C. Peffer.
Fall River	do.	925	16	46.6	+ 0.7	76	9	21	27	45	0.25	- 1.54	0.15	0	2	25	5	0	s.	J. McDaniel.
Fargo	Seward		2								0.10		0.10	1.0	1	28	2	0	s.	N. B. Swink.
Fredonia	Wilson	975	9	48.0		75	10	22	24	36	0.76		0.66	0	2	23	2	5	s.	F. W. Holmes.
Garden City	Finney	2,836	23	43.1	+ 0.1	84	10	7	27	53	0.29	- 0.35	0.11	2.0	3	25	1	4	s.	B. F. Stocks.
Great Bend	Barton	1,850	3								0.31		0.19	2.5	2	21	8	1	sw.	I. Pritchard.
Greensburg	Kiowa	2,235	5	46.5		80	10	15	27	42†	0.04		0.03	T.	2	26	0	4	s.	C. C. Raymond.
Grenola	Elk	1,116	24	47.4	+ 2.4	76	9	18	25	41	0.42	- 1.33	0.35	T.	2	21	5	4	sw.	W. H. Lawyer.
Hess	Gray		6																	Harry Jacques.
Howard	Elk	1,112	5	46.8		78	6	18	25	41	0.38		0.38	0	1	21	6	3	s.	J. W. Eby.
Hugoton	Stevens		8																	F. A. McCoy.
Hutchinson	Reno	1,535	22	46.0	+ 1.1	76	9†	19	24	48	T.	- 0.72	T.	T.	0	24	5	1	s.	Sheridan Plouffe.
Independence	Montgomery	800	38	47.8	+ 1.8	77	10	19	25	40	1.66	- 0.28	1.66	0	2	21	4	5	s.	F. L. Kenoyer.
Iola	Allen	984	6	45.8	+ 2.3	75	10	19	25	38	0.26	- 1.12	0.26	0	2	23	2	5	s.	U. S. Weather Bureau.
Irene	Hamilton	3,440	2	43.4		89	10	1	27	59	0.64		0.59	0.5	2	22	6	2	nw.	N. M. Herbig.
Jetmore	Hodgeman	2,268	11	44.6		82	10	11	27	51	0.58	- 0.07	0.48	1.0	2	16	10	4	sw.	James Alken.
Kingman	Kingman	1,504	4	47.0		78	10	19	25	41	0.12		0.12	1.0	1	18	11	1	sw.	B. B. Anawalt.
La Crosse	Rush	2,061	10	42.6		81	9	10	27	52	0.84	- 0.07	0.45	3.5	3	23	4	3	sw.	Rodney Torrey.
Lakin	Kearny	2,993	22	41.6	- 0.7	82	10	5	27	57	0.10	- 0.42	0.10	2.0	1	24	6	0	ne.	C. H. Longstreth.
Larned	Pawnee	2,090	27	45.8		80	9†	13	27	47	0.33	- 0.63	0.25	3.0	2	24	3	3		H. H. Wolcott.
Lebo	Coffey	1,138	26	46.0	+ 3.1	73	9†	20	24	39	0.73	- 0.90	0.73	0	1	23	3	4	sw.	J. J. Bowman.
Le Roy	do.	990	3								0.38		0.20	T.	2	23	2	5	s.	F. W. Schmitt.
Liberal	Seward	2,843	5	45.8		84	10	12	27	54	0.10		0.10	1.0						



TABLE 1.—Climatological data for November, 1912. District No. 7—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.					Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of overcast cloudy days.		
Oklahoma.																				
Ada.....	Pontotoc.....	1,001	4	52.0	.....	77	9	25	24	34	0.64	.....	0.56	0	3	22	4	4	s.	W. S. Creveling.
Alva.....	Woods.....	1,350	7	48.4	.....	80	9†	14	30	49	T.	.....	T.	0	19	10	1	1	s.	S. A. Stech.
Apache.....	Caddo.....	1,255	2	49.3	.....	77	9	19	25	44	0.31	.....	0.17	0	3	26	3	1	s.	G. D. Teeter.
Arapaho.....	Custer.....	1,575	18	49.24	+ 0.7	76	.....	20	.....	42	T.	- 1.87	T.	0	29	1	0	1	s.	J. C. Brower.
Ardmore.....	Carter.....	872	10	52.6	- 1.2	77	9	25	28	35	2.37	- 0.44	1.90	0	2	20	7	3	s.	H. T. Nistbitt.
Arnett.....	Ellis.....	2,136	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. H. Holmes.
Bartlesville.....	Washington.....	687	4	49.3	.....	79	9	20	25	39	0.41	.....	0.41	0	1	24	1	5	s.	Dr. A. P. Owens.
Beaver.....	Beaver.....	2,500	15	46.2	+ 1.3	83	10	14	27	50	0.20	- 0.99	0.20	2.0	1	23	5	2	sw.	W. C. Frazer.
Blackburn.....	Pawnee.....	800	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. M. Rhodes.
Cache.....	Comanche.....	1,350	6	47.6	.....	76	10	14	28	48	0.34	.....	0.20	0	2	25	4	1	n.	Mrs. Frank Rush.
Calvin.....	Hughes.....	713	7	.....	.....	.....	.....	.....	.....	.....	1.92	.....	1.35	0	3	24	0	6	s.	Thomas Purrell.
Chandler.....	Lincoln.....	865	10	50.8	- 0.7	78	8	26	25†	45	1.10	- 0.31	1.10	0	1	24	1	5	s.	Chas. L. Kern.
Chattanooga.....	Comanche.....	1,150	6	53.0	.....	75	9†	25	25	39	0.00	.....	0.00	0	0	27	3	0	s.	Squire Humble.
Chickasha.....	Grady.....	1,091	10	51.1	- 1.1	79	8	18	25	49	0.15	- 2.16	0.15	0	1	28	1	1	n.	J. C. Good.
Cloud Chief.....	Washita.....	1,400	10	50.4	- 0.1	78	9	20	25	42	0.23	- 2.07	0.15	T.	2	22	8	0	s.	J. P. Stutzman.
Crawford.....	Roger Mills.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. W. Blackburn.
Durant.....	Bryan.....	643	10	51.5	- 2.3	78	11	26	25	40	1.33	- 1.06	0.98	0	3	22	5	3	n.	Nelson Houk.
Eldorado.....	Jackson.....	1,456	5	51.2	.....	78	9†	23	26	42	0.00	.....	0.00	0	0	27	2	1	se.	T. W. Lanham.
Elk City.....	Beckham.....	.....	.....	.....	.....	80	23	.....	.....	.....	T.	.....	T.	0	23	4	3	s.	R. J. Carlile.	
El Reno.....	Canadian.....	1,400	20	52.0	+ 2.6	78	10	24	25	43	0.04	- 1.96	0.04	0	1	20	7	0	n.	Rose E. Walker.
Enid.....	Garfield.....	1,269	10	50.7	+ 1.3	75	18	20	25	44	0.36	- 1.82	0.20	T.	3	22	5	3	s.	Uri B. Worcester.
Erick.....	Beckham.....	2,058	7	49.8	.....	79	9†	20	25†	45	T.	.....	T.	0	0	27	2	1	s.	A. W. Hanes.
Eufaula.....	McIntosh.....	566	.....	50.0	.....	76	8†	25	25	41	0.96	.....	0.85	0	4	18	5	7	s.	R. Uhl Brown.
Fairland.....	Ottawa.....	839	12	49.4	- 1.1	77	9	20	25	39	1.96	- 0.73	1.96	0	2	19	3	8	s.	C. W. Prier.
Fort Gibson.....	Muskogee.....	556	7	.....	.....	.....	.....	.....	.....	.....	1.76	.....	0.98	0	3	23	2	5	s.	John T. Welsh.
Frederick.....	Tillman.....	1,293	5	51.4	.....	79	11†	22	26	43	0.02	.....	0.02	0	1	25	3	2	nw.	B. B. Bradley.
Geary.....	Blaine.....	1,546	.....	50.2	.....	76	9	22	25	36	0.17	.....	0.11	0.2	3	23	6	1	sw.	O. P. Ruth.
Goodwell.....	Texas.....	3,300	1	45.8	.....	82	10	6	27	50	0.26	.....	0.20	2.0	2	25	3	2	s.	S. W. Black.
Guthrie.....	Logan.....	1,000	19	50.3	- 0.4	80	9	18	20	44	T.	- 2.38	T.	0	0	27	2	1	n.	S. E. Snyder.
Guymon.....	Texas.....	3,133	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. L. Mordt.
Hartshorne.....	Pittsburg.....	700	13	54.0	- 1.7	79	5	22	25	40	0.92	- 2.48	0.47	0	2	23	4	3	s.	Frank Webber.
Healdton.....	Carter.....	900	18	51.7	- 1.6	79	9†	13	28	47	1.15	- 1.30	1.15	0	1	23	7	0	s.	C. H. Heald.
Helena.....	Alfalfa.....	1,396	4	49.2	.....	80	10	21	25†	47	0.13	.....	0.10	1.0	2	21	7	2	n.	J. G. McCall.
Hennessey.....	Kingfisher.....	1,166	17	48.44	- 1.8	75	.....	20	.....	40	T.	- 1.79	T.	0	0	17	6	0	n.	Mrs. M. C. Parks.
Hobart.....	Kiowa.....	1,396	9	49.8	.....	78	9	25	28	38	0.13	.....	0.13	T.	1	23	7	0	sw.	Rev. J. E. Black.
Holdenville.....	Hughes.....	900	11	50.8	- 1.8	78	16	24	25†	39	1.20	- 1.43	0.75	0	2	25	4	1	s.	Eula L. Rutherford.
Hooker.....	Texas.....	3,038	6	44.9	.....	83	10	6	27	56	0.05	.....	0.25	0.5	1	23	2	5	sw.	H. N. Kelly.
Hurley.....	Cimarron.....	4,200	4	41.4	.....	85	11	10	27	56	T.	.....	T.	0	10	19	1	nw.	Dr. C. W. Meyers.	
Idabel.....	McCurain.....	474	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. L. Henderson.
Jefferson.....	Grant.....	1,062	18	47.7	+ 1.0	79	9	16	25	47	0.04	- 1.45	0.04	T.	1	23	6	1	s.	T. E. Beck.
Kenton.....	Cimarron.....	4,000	11	44.5	- 0.4	84	9	10	27	56	0.13	- 0.45	0.11	0.2	2	19	11	0	n.	Wm. H. Guy.
Kingfisher.....	Kingfisher.....	1,046	15	49.8	- 0.6	79	9	19	25	46	0.72	- 1.39	0.40	0	5	21	7	2	s.	J. C. Cross.
Lawton.....	Comanche.....	1,111	.....	45.3	.....	80	12	20	25	42	0.02	.....	0.02	0	1	22	7	1	n.	F. C. Davis.
McAlester.....	Pittsburg.....	698	15	53.4	.....	78	8†	25	25	36	1.35	- 1.50	1.16	0	3	22	0	8	n.	Wm. Noble.
Mangum.....	Greer.....	1,585	19	49.8	- 0.9	80	11	23	28	47	0.78	- 0.85	0.75	0	2	24	3	3	se.	F. D. Dodson.
Marlow.....	Stephens.....	1,292	11	50.8	- 1.1	77	9†	26	27	38	0.45	- 2.37	0.35	0	21	24	3	3	n.	Wm. B. Anthony.
May.....	Harper.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. C. Gray.
Meeker.....	Lincoln.....	1,030	18	47.6	- 2.2	77	11	19	25	38	0.00	- 2.13	0.00	0	0	24	2	4	s.	Dr. J. H. Baugh.
Muskogee.....	Muskogee.....	614	13	50.8	- 1.3	77	9	23	28	38	1.10	- 1.36	1.10	0	1	21	1	8	n.	J. Harry Randall.
Mutual.....	Woodward.....	4	48.4	.....	.....	80	9	18	27	47	T.	.....	T.	0	0	24	4	2	s.	Thos. Martin.
Neola.....	Caddo.....	1,500	6	49.6	.....	76	9	20	28	39	0.11	.....	0.07	T.	2	27	3	0	s.	R. N. Schooling.
Newkirk.....	Kay.....	1,149	14	48.4	- 0.4	75	.....	25	.....	34	0.97	- 0.78	0.97	T.	1	21	5	4	s.	P. H. Albright & Co.
Norman.....	Cleveland.....	1,171	17	49.8	- 0.9	77	9	19	25	42	1.92	- 0.62	1.90	0	2	21	8	1	s.	S. E. Boyd.
North Muskogee.....	Muskogee.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. E. Walker.
Oakwood.....	Dewey.....	1,854	2	47.6	.....	75	9	18	25	42	0.03	.....	0.02	0.2	2	24	5	1	s.	Dr. F. P. Osborn.
Okemah.....	Blaine.....	1,194	7	49.8	.....	77	9	20	25	43	0.12	.....	0.06	0.1	3	23	7	0	s.	Dr. L. H. Murdoch.
Okemah.....	Okfuskee.....	.....	.....	51.4	.....	75	8†	23	25	37	1.60	.....	1.50	0	2	24	0	6	s.	S. F. Smith.
Oklahoma.....	Oklahoma.....	1,247	22	50.0	+ 2.1	76	9	25	25	33	0.39	- 1.86	0.38	T.	2	21	6	3	s.	U. S. Weather Bureau.
Okmulgee.....	Okmulgee.....	752	7	53.6	.....	84	14†	22	25†	48	1.80	.....	1.55	0	2	23	2	5	s.	J. L. Maynard.
Pauls Valley.....	Garvin.....	880	11	49.3	- 3.3	82	4†	22	26†	47	0.81	- 1.58	0.81	0	1	20	10	0	s.	A. M. Foss.
Pawhuska.....	Osage.....	918	11	51.7	+ 3.6	86	12	18	25	44	0.44	- 1.83	0.30	0	3	21	8	1	s.	R. C. Block.
Perry.....	Noble.....	920	13	49.8	- 0.3	80	10	21	25	40	0.12	- 2.06	0.10	T.	2	21	8	1	s.	S. E. Laird.
Rankin.....	Rogers Mills.....	2,200	8	48.0	.....	77	10	16	27	42	0.12	.....	0.07	0.5	2	27	4	0	sw.	Roy Kagay.
Ravin.....	Johnston.....	796	9	50.6	.....	76	11	25	25	39	0.52	.....	0.36	0	2	23	1	6	s.	R. G. Gupitill.
Sac & Fox Agency																				



TABLE 1.—Climatological data for November, 1912. District No. 7—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Missouri—Continued.																				
Koshkonong.....	Oregon.....	911	12	49.2	+ 0.3	76	10	22	25	38	1.31	- 1.99	1.31	0	1	21	4	5	s.	J. W. Hitt.
Lamar.....	Barton.....	964	31	46.6	+ 0.3	75	9†	20	25	37	1.70	- 0.44	1.38	T.	2	21	5	4	sw.	E. H. Adams.
Marble Hill.....	Bollinger.....	420	22	45.2	- 0.3	75	10†	15	25	42	2.36	- 0.89	1.70	0	2	23	5	2	n.	A. F. Handrix.
Mountaingrove.....	Wright.....	1,490	14	46.7	+ 0.1	74	10	17	25	32	1.76	- 0.43	1.18	0	2	19	6	5	nw.	Mo. Fruit Exp. Sta.
Mount Vernon.....	Lawrence.....	1,480	35	46.8	- 0.2	75	11	17	25	38	2.87	- 0.07	2.30	T.	3	22	4	4	sw.	J. R. White & Son.
Neosho.....	Newton.....	1,023	30	47.2	+ 0.3	76	10	16	25	43	2.07	- 0.95	1.79	0	3	19	5	6	nw.	W. O. Buck.
New Madrid.....	New Madrid.....	285	19								1.62	- 2.85	0.90	0	5	14	2	14	s.	Miss Josie Smith.
Oakfield.....	Franklin.....	793	21	47.1	+ 1.6	77	10†	19	25	34	1.73	- 1.00	1.42	0	4	17	9	4	sw.	E. E. Steines.
Olden.....	Howell.....	1,246	23	48.8	+ 1.7	75	10	25	2	33	1.60	- 1.47	1.20	0	2	21	7	2	nw.	J. D. Evans.
Rolla.....	Phelps.....	1,139	32	46.0	+ 3.0	76	10†	19	25	36	2.12	- 0.42	1.54	0	4	24	2	4	sw.	Prof. P. J. Wilkins.
Springfield.....	Greene.....	1,350	26	46.5	+ 2.0	73	10	23	25	28	1.85	- 0.79	1.85	T.	1	24	1	5	s.	U. S. Weather Bureau.
Kentucky.																				
Blandville.....	Ballard.....	445	31	48.6	+ 2.0	74	10	24	25†	31	0.73	- 3.73	0.37	0	3	20	4	6	sw.	E. W. Horr.
Tennessee.																				
Arlington.....	Shelby.....	450	30	45.4	- 4.0	74	11	19	25	43	1.49	- 2.56	1.10	T.	3	13	2	15	n.	A. Thomas B. Etheridge.
Bolivar.....	Hardeman.....	361	25	47.6	- 2.7	74	12	23	26	33	1.24	- 3.18	0.52	0	5	18	0	12	sw.	Miss Mary A. Smith.
Brownsville.....	Haywood.....	311	27	47.6	- 2.4	72	12	22	28	32	0.80	- 3.70	0.60	0	4	22	1	7	n.	Miss Hattie N. Moses.
Covington.....	Tipton.....	361	25	48.6	- 0.9	75	10	21	28	40	1.50	- 3.41	1.50	0	1	24	0	6	se.	James S. Ruffin.
Dyersburg.....	Dyer.....	450	29	48.4	- 2.2	76	11	18	28	49	0.80	- 3.19	0.80	0	1	22	5	3	sw.	Miss Martha A. Sinclair.
Jackson.....	Madison.....	325	19	46.6	- 3.4	74	11†	16	28	38	0.48	- 4.63	0.38	T.	2	20	4	6	n.	Shelby A. Robert.
Kenton.....	Obion.....	409	10	51.2	- 0.2	75	12	31	28	26	1.02	- 3.57	0.90	T.	3	18	3	9	s.	George S. Martin.
Memphis.....	Shelby.....	440	41	46.4	- 1.7	74	11	20	28†	40	1.57	- 3.38	0.99	0	4	15	5	10	s.	U. S. Weather Bureau.
Milan.....	Gibson.....	345	29	47.8	- 0.2	76	11	18	25†	41	1.54	- 3.25	1.01	0	3	23	4	3	sw.	Oriando F. Cantwell.
Trenton.....	do.....	360	14																	F. L. Dennison.
Union City.....	Obion.....	360	14																	J. B. Kimzey.
Arkansas.																				
Alicia.....	Lawrence.....	250	8	49.4		77	1	18	25	40	2.55		1.50	0	2	17	8	5	nw.	McCullough & Guelck.
Amity.....	Clark.....	250	20	52.0		78	12	23	28	37	0.07		0.07	0	1	20	7	3	sw.	J. W. Campbell.
Arkadelphia (near).....	do.....	250	5								1.96	- 1.80	1.42	0	4					J. A. Ross.
Arkansas City.....	Desha.....	145	29								2.68		1.50	0	3					W. C. Blundell.
Batesville.....	Independence.....	271	7								1.50	- 1.82	1.30	0	2	21	3	6		Lelia I. Teter.
Bee Branch.....	Van Buren.....	20	30.3	- 0.8	80	8	19	28	43	1.50	- 1.82	1.30	0	2	21	3	6		J. E. Scanlan.	
Benton.....	Saline.....	283	5	50.0		79	9	19	28	44	1.40		1.40	0	1	21	3	6	s.	P. B. Jackson.
Bentonville.....	Benton.....	1,303	7	48.0	+ 1.3	73	11	20	25	33	1.18	- 1.81	1.16	T.	3	20	6	4	s.	U. S. Weather Bureau.
Bergman.....	Boone.....	1,324	15	47.2	+ 1.6	76	10†	17	2	38	1.98	- 0.76	1.46	0	2	25	2	3	nw.	John T. Maxey.
Black Rock.....	Lawrence.....	259	8								3.60		2.93	0	2					S. J. Howe.
Brinkley.....	Monroe.....	226	26	51.3	+ 0.5	78	8†	19	28	43	1.80	- 3.10	0.92	T.	2					H. L. D. Whitson.
Calico Rock.....	Izard.....	361	8								4.20		2.50	0	2					W. H. Stoner.
Camden.....	Ouachita.....	158	27	51.4	- 0.9	80	12	18	28	44	2.09	- 2.16	0.91	0	5	18	2	10	sw.	R. K. Quarterman.
Centerpoint.....	Howard.....	470	12	53.4	- 1.8	79	7	20	28	39	1.55	- 2.31	1.55	0	1	18	7	5	se.	J. M. Huddleston.
Clarendon.....	Monroe.....	171	8								1.45		0.95	0	5					Mrs. B. E. Bishop.
Conway.....	Faulkner.....	309	29	49.4	- 0.5	77	12	23	25	34	2.00	- 2.27	1.98	0	3	19	9	2	nw.	G. M. Burr.
Corning.....	Clay.....	293	20	48.6	+ 1.9	77	10	19	25†	38	1.96	- 1.27	1.81	0	3	13	9	8	s.	Jacob Brobst.
Dardanelle.....	Yell.....	330	26	50.3		78	12	20	28	41	3.42	- 0.10	1.99	0	3					A. Bernard.
Dodd City.....	Marion.....	1,175	31	47.4	- 0.2	76	10	18	25	38	1.70	- 1.49	1.70	0	1	16	10	4		Neal Dodd.
Dumas.....	Desha.....	265	10	45.5		75	8	13	25†	46	1.15		1.00	T.	2	26	4	0		Lawrence Waterman.
Dutton.....	Madison.....	265	8	53.9		89	11	26	25†	39	1.22		0.84	0	3					J. M. Ricketts.
Eldorado.....	Union.....	6	50.2		89	11†	20	25†	43	0.82			0.82	0	1					Jeff J. Babb.
England.....	Lonoke.....	1,465	10	50.8	+ 1.0	79	8	18	25	43	2.00	- 0.63	1.78	0	2	16	9	5	sw.	J. C. Chenault.
Eureka Springs.....	Carroll.....	1,451	23	49.2	+ 0.8	74	11	19	25	37	1.98	- 1.21	1.79	0	2	17	10	3	sw.	George W. Nicholds.
Fayetteville.....	Washington.....	481	30	51.3	+ 1.4	76	9	24	28	34	1.95	- 1.33	1.90	T.	3	16	9	3	sw.	University of Arkansas.
Fordyce.....	Dallas.....	200	1								0.73		0.72	0	3	18	9	3	e.	J. B. Atkinson.
Fort Smith.....	Sebastian.....	200	1								0.80		0.64	0	2					U. S. Weather Bureau.
Fraziers Turnpike.....	Pulaski.....	264	8								1.54		1.00	0	3					R. E. Brown.
Fulton.....	Hempstead.....	643	14	49.4	- 0.3	76	10	19	25	39	2.35	- 0.59	2.33	0	3	19	4	7	sw.	B. C. Logan.
Georgetown.....	White.....	182	27	49.8	- 2.2	74	11†	28	28	35	1.58	- 3.15	0.84	0	4					W. N. Harris.
Hardy.....	Sharp.....	600	20	53.9	+ 2.6	78	8†	25	28	38	T.	- 4.66	T.	0	0	25	5	0	sw.	C. A. Caywood.
Helena.....	Phillips.....	85	5	53.8		81	12	24	25	46	0.56		0.56	0	1					J. B. McLeod.
Hot Springs.....	Garland.....	345	17	50.5	- 0.9	78	11	20	25	40	1.35	- 2.14	0.85	0	2	9	19	2	ne.	Army and Navy Gen. Hosp.
Huttig.....	Union.....	19	52.4	- 0.9	84	12	23	28	41	1.10	- 2.94	0.82	0	2	24	4	2	n.	C. A. Berry.	
Jonesboro.....	Craighead.....	195	5																	Benedictine Sisters.
Junction.....	Jefferson.....	262	9	54.2		80	8†	19	28	43	0.43		0.40	0	2					J. A. Lowderback.
Lake Farm.....	Lafayette.....	357	34	51.8	+ 0.3	77	12	26	28	30	0.63	- 3.96	0.62	0	3	18	10	2	nw.	G. L. Spellman.
Lewisville.....	Pulaski.....	775	15	49.2	- 1.3	75	11	20	28	35	1.64	- 2.24	1.06	0	3	18	9	3	w.	F. W. Youmans.
Little Rock.....	Johnson.....	277	25	52.0	+ 0.1	79	12	21	28	40	2.40	- 2.39	1.40	0	3					U. S. Weather Bureau.
Lutherville.....	Hot Spring.....	512	8	47.2		78	10	16	25†	48	1.43		1.23	0	3	17	10	3		W. R. Hentschel.
Malvern.....	Fulton.....	229	8																	Miss L. C. Smith.
Mammoth Spring.....	Poinsett.....	1,100	26	52.7	+ 1.1	79	12	25	28	41	0.86	- 2.74	0.52	0	2	27	1	2	sw.	F. Wallick.
Marked Tree.....	Polk.....	231	28	51.1	- 0.8	79	8	21	28	43	1.83	- 3.04	0.93	0	2					Chapman & Dewey Lumber Co.
Mena.....	Jackson.....	215	24	50.3	- 2.5	78	9†	21	28†	43	1.56	- 2.53	0.91	0	5					R. R. St. John.
Newport.....	Jefferson.....	20	50.2	+ 2.1	77	10	17	25	44	2.23	- 1.41	2.19	0	3	19	0	11			Chas. Sprigg.
Pine Bluff.....	Randolph.....	1,250	15	47.8	- 0.4	75	11	16	25	41	1.97	- 0.84	1.73	0	2	19	5	6		



TABLE 1.—Climatological data for November, 1912. District No. 7—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of overcast days.
Mississippi.																				
Anguilla.....	Sharkey.....	107	4	51.8	.....	83	1	21	28	46	0.55	.....	0.34	T.	5	24	2	4	ne.	E. W. Cook.
Austin.....	Tunica.....	200	16	50.0	-2.3	77	11	21	25	42	2.13	-3.45	1.04	T.	3	22	6	2	nw.	H. J. Irvine.
Batesville.....	Panola.....	230	25	49.6	-1.8	78	10	21	28	42	1.36	-2.35	0.85	T.	4	24	0	6	w.	J. M. Cox.
Big Creek.....	Calhoun.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. P. Havens.
Canton.....	Madison.....	228	22	53.0	-2.6	81	10	23	25	44	0.75	-2.34	0.30	T.	4	15	11	4	se.	Dr. G. W. Smith-Vaniz.
Charleston.....	Tallahatchie.....	.....	2	52.2	.....	84	1	17	28	58	1.17	.....	0.37	T.	4	18	6	6	s.	W. B. Burke.
Clarksdale.....	Coahoma.....	177	5	49.0	.....	76	8	22	25	46	1.42	.....	0.91	T.	5	15	5	10	s.	A. C. Tuttle.
Cleveland.....	Bolivar.....	160	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.00	T.	4	23	0	7	.....	W. W. Boone.
Coffeeville.....	Yalobusha.....	241	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.90	0	2	22	6	2	.....	C. K. Bailey.
Corinth.....	Alcorn.....	470	24	47.4	-3.1	76	10	20	28	44	1.20	-2.83	0.60	T.	5	20	3	7	se.	M. A. Candler.
Crenshaw.....	Panola.....	187	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mrs. A. L. Fitzgerald.
Duck Hill.....	Montgomery.....	.....	13	53.0	-0.6	78	10	22	19	40	1.05	-1.97	0.70	T.	2	.....	.....	.....	.....	W. H. Eskridge.
Edwards.....	Hinds.....	222	25	52.8	-3.8	82	10	26	31	42	1.75	-1.50	0.60	2.0	3	21	5	4	n.	E. F. Farr.
Fayette.....	Jefferson.....	270	11	53.2	-2.9	81	9	24	31	46	1.42	-2.95	0.45	0.5	4	20	7	3	nw.	T. L. Darden.
Greenville.....	Washington.....	126	25	51.8	-2.5	79	11	25	28	43	2.01	-1.68	1.07	T.	5	20	2	8	sw.	F. L. Harbison.
Greenwood.....	Lefflore.....	140	12	50.2	-3.7	80	10	22	28	47	1.08	-2.41	0.43	T.	4	20	7	3	se.	J. H. Stephen.
Grenada.....	Grenada.....	194	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. A. Jones.
Hernando.....	De Soto.....	391	24	50.6	-1.2	76	11	22	28	39	1.37	.....	0.74	T.	5	20	5	5	s.	W. F. Wood.
Hickory Flat.....	Benton.....	435	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. Powell.
Holly Springs.....	Marshall.....	600	25	48.2	-2.0	75	11	24	28	32	1.08	-2.71	0.67	T.	4	21	1	8	se.	L. B. Mosby.
Kosciusko.....	Attala.....	430	22	50.2	-3.7	79	10	23	25	46	1.72	-1.25	0.82	T.	6	24	3	3	e.	E. L. Lucas.
Malone.....	Marshall.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.00	T.	3	.....	.....	.....	.....	M. J. Wilkins.
Marks.....	Quitman.....	163	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. P. Banister.
Natchez.....	Adams.....	206	24	52.1	-6.4	80	11	27	41	47	1.07	-3.05	0.45	T.	4	14	0	16	n.	F. L. Garrity.
New Albany.....	Union.....	398	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. Marshall.
Pontotoc.....	Pontotoc.....	475	23	50.0	-2.5	76	10	21	28	40	0.30	-3.14	0.20	1.0	2	16	12	2	se.	Dr. C. W. Bolton.
Port Gibson.....	Claiborne.....	116	24	50.5	-5.4	80	10	22	29	45	1.85	-1.71	1.01	T.	5	20	4	6	e.	H. H. Crisler.
Rosedale.....	Bolivar.....	143	4	48.8	.....	79	11	20	25	47	1.75	.....	0.95	T.	3	19	0	11	nw.	T. J. Murray.
Senatobia.....	Tate.....	284	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.10	0	2	22	0	8	n.	C. Brickell.
Shoccoe.....	Madison.....	.....	9	51.6	.....	81	10	25	31	44	1.00	-1.19	0.47	1.0	3	23	4	3	n.	J. C. Pitchford.
Suffolk.....	Franklin.....	11	11	55.0	-4.4	79	10	27	31	39	0.72	-2.72	0.28	T.	4	18	7	5	n.	Prof. G. H. Kent.
Swan Lake.....	Tallahatchie.....	148	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.40	T.	2	23	0	7	se.	Dr. S. D. Robinson.
Tchula.....	Holmes.....	130	7	.....	.....	80	10	21	25	.....	0.80	.....	0.28	T.	4	10	15	5	n.	Dr. M. P. Winkler.
University.....	Lafayette.....	502	19	49.4	-3.3	72	11	23	28	31	1.54	-2.31	0.57	T.	4	21	2	7	n.	Prof. J. H. Dorroh.
Utica.....	Hinds.....	287	8	53.6	.....	83	10	24	3	45	1.52	.....	0.78	1.0	6	24	1	5	nw.	Dr. J. B. Dudley.
Vicksburg.....	Warren.....	247	41	54.5	-1.4	78	11	27	28	31	0.65	-3.54	0.25	T.	4	18	6	6	se.	U. S. Weather Bureau.
Water Valley.....	Yalobusha.....	300	23	50.1	-2.8	78	11	21	24	42	0.87	-2.72	0.40	T.	3	20	5	5	ne.	Miss Louie Erikson.
Woodville.....	Wilkinson.....	560	19	56.6	-1.4	82	9	26	28	40	0.86	-2.90	0.58	0	3	24	6	0	n.	James E. Lee.
Yazoo City.....	Yazoo.....	116	18	52.2	-2.8	81	7	24	25	50	0.91	-2.07	0.31	T.	3	24	0	6	nw.	W. H. Courts.
Louisiana.																				
Abbeville.....	Vermilion.....	18	24	57.4	-3.5	83	12	28	28	38	1.63	-1.80	1.07	0	4	19	7	4	n.	C. J. Edwards.
Alexandria.....	Rapides.....	77	24	53.6	-3.4	80	6	24	28	41	0.70	-3.59	0.50	T.	2	17	2	11	n.	Nellie Graham.
Amite.....	Tangipahoa.....	130	24	54.6	-3.9	80	13	25	29	45	2.75	-0.59	1.10	T.	3	10	17	3	n.	Lulu M. Wentz.
Antioch.....	Claiborne.....	.....	.....	53.8	.....	84	1	22	28	43	1.32	.....	1.22	T.	2	22	0	8	n.	W. L. Anglin.
Avoca Island.....	St. Mary.....	9	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.55	0	5	17	9	4	.....	J. N. Pharr & Sons (Ltd.).
Baton Rouge.....	East Baton Rouge.....	60	24	59.2	-0.4	83	12	30	28	39	0.68	-4.02	0.44	0	4	15	1	14	ne.	Elmo M. Bott.
Burnside.....	Ascension.....	20	12	57.5	-3.0	84	12	29	31	41	1.65	-0.78	0.70	0	4	15	5	10	n.	C. S. McFarland.
Burwood.....	Plaquemines.....	1	24	65.1	-1.0	82	5	44	28	25	2.35	-0.17	0.90	0	5	20	3	7	nw.	Graham Meyers.
Cades.....	St. Martin.....	2	2	56.5	.....	85	8	23	28	45	0.44	.....	0.18	0	3	23	2	5	n.	C. E. Smedes.
Calhoun.....	Ouachita.....	180	24	53.4	-1.5	83	12	20	28	49	0.48	-3.36	0.26	T.	3	15	8	7	ne.	N. La. Experiment Station.
Cameron.....	Cameron.....	6	19	54.3	-7.7	81	6	23	28	43	1.13	-2.78	0.83	0	4	17	11	2	se.	Adolph Bruckert.
Carrollton.....	Orleans.....	7	1	56.7	.....	82	12	30	29	38	2.91	.....	2.31	0	5	24	0	6	n.	Loyola College.
Cheneyville.....	Rapides.....	67	24	55.6	-2.0	84	11	25	3	46	0.95	-2.96	0.75	0	2	19	3	8	n.	Walter I. Tanner.
Cinclare.....	West Baton Rouge.....	2	2	55.8	.....	83	12	26	27	42	0.55	.....	0.40	0	2	12	4	14	n.	Cinclare Central Factory.
Clinton.....	East Feliciana.....	113	24	55.6	-2.8	81	9	26	29	42	1.00	-1.95	0.44	0	4	17	12	1	n.	John A. White.
Collinston.....	Morehouse.....	65	11	53.2	-2.4	88	6	20	28	48	0.30	-3.38	0.30	0	1	23	2	5	s.	John B. Reilly.
Columbia.....	Caldwell.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. W. Blanks.
Covington.....	St. Tamary.....	39	20	56.8	+0.8	83	12	28	29	46	2.89	+0.10	1.20	0	7	20	2	8	n.	Cecile P. Champagne.
Dodson.....	Winn.....	3	3	54.8	.....	83	9	22	28	42	0.30	.....	0.30	T.	1	17	10	3	w.	J. P. Lucas.
Donaldsonville.....	Ascension.....	33	24	61.4	0.0	85	11	32	28	37	2.15	-1.34	0.75	0	5	18	3	9	n.	John F. Park.
Dutchtown.....	do.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.00	0	2	27	1	2	.....	Picard & Geismar (Ltd.).
Farmerville.....	Union.....	177	24	51.2	-3.9	78	10	21	28	50	0.95	-3.17	0.75	T.	2	25	2	3	n.	W. P. Chandler.
Ferriday.....	Concordia.....	5	5	57.4	.....	79	11	28	28	42	0.55	.....	0.55	0	1	.....	.....	.....	.....	C. L. Achor.
Franklin.....	St. Mary.....	10	20	58.0	-3.0	84	11	29	28	40	0.83	-2.70	0.72	0	5	15	11	4	ne.	J. M. Bonney.
Franklinton.....	Washington.....	2	2	56.2	.....	82	12	29	31	35	0.92	.....	0.40	0	4	9	9	12	n.	Herbert R. Babington.
Grand Cane.....	De Soto.....	302	18	47.4	-9.1	79	8	15	29	48	0.54	-3.69	0.20	0	5	12	7	11	s.	G. Foster Provost.



TABLE 1.—Climatological data for November, 1912. District No. 7—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Louisiana—Continued.																				
Paradis.....	St. Charles.....		1								1.10		0.60	0	3					R. E. Boyce.
Pearl River.....	St. Tamany.....	29	6								3.14		1.08	0	7	20	4	6	n.	George F. Banks.
Plain Dealing.....	Bossier.....	268	20	53.0	- 2.0	81	12	20	28	42	0.73	- 2.71	0.55	0	3	22	6	2	ne.	Leon Sanders.
Rayne.....	Arcadia.....	44	20	57.9	- 2.8	88	9†	24	28	43	0.25	- 3.66	0.25	0	1	20	0	10	n.	A. P. McNeill.
Reserve.....	St. John Baptist.....		11	58.8	- 0.1	91	12	31	28†	46	1.91	- 0.12	1.65	0	2	22	4	4	.....	Leon Godchaux Co. (Ltd.).
Richland Plantation.....	Rapides.....			54.0		83	1	23	28	38	0.67		0.43	0	3	26	0	4	ne.	A. B. Pendleton.
Robeline.....	Natchitoches.....	147	16	50.7	- 5.6	84	12	18	28†	52	0.80	- 2.70	0.70	0	2	17	2	11	n.	Ruby McCook.
Ruston.....	Lincoln.....	312	17	49.1	- 8.3	82	11	25	27	38	0.48	- 3.49	0.30	0	3	24	0	6	s.	Andor M. Larson.
St. Francisville.....	West Feliciana.....	115	9	56.4		81	1†	26	28	33*	2.30		2.10	0	5	13	13	4	n.	G. W. Newman.
Schriever.....	Terrebone.....	17	20	56.7	- 4.4	85	12	28	29	46	0.90	- 1.91	0.40	0	3	16	7	7	n.	William H. Gautreaux.
Shreveport.....	Caddo.....	249	41	54.9	- 0.4	80	11	30	28	32	0.50	- 3.58	0.37	0	4	18	9	3	se.	U. S. Weather Bureau.
Simmesport.....	Avoyelles.....	42	6								1.09		0.96	0	4	8	2	20	n.	C. T. Leigh.
Southern Univ. Farm.....	Jefferson.....		15								2.62	+ 0.02	2.01	0	4	20	6	4	ne.	F. L. St. Martin.
Sugartown.....	Calcasieu.....		19	57.0	- 1.5	80	11†	29	28	38	0.30	- 3.62	0.30	0	1	11	19	0	.....	G. W. Richardson.
Tallulah.....	Madison.....	91	5	51.7		85	1	23	28	42	2.11		0.65	T.	6				.....	Neal T. Halt.
Walker.....	Livingston.....		2	55.8		83	5†	25	28†	45	1.20		0.65	0	3	14	14	2	nw.	H. C. Fondren.
Winnsboro.....	Franklin.....																			J. C. Carlton.

\* b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

\*\* Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.



TABLE 2.—Daily precipitation for November, 1912. District No. 7, Lower Mississippi Valley.

Stations.	Watershed.	Day of month.																														Total.		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
Colorado.																																		
Buena Vista.....	Arkansas.....																																T.	T.
Calhan.....	Big Sandy.....																																	T.
Canon City	Arkansas.....												T.																				T.	
Colorado Springs..	Fountain.....											.01	.01																				T.	
Cripple Creek.....	Oil Creek.....											T.	.09																				T.	
Cuchara Camps....	Cucharas.....																																	T.
Eads.....	Big Sandy.....																																	T.
Fairview.....	St. Charles.....																																	T.
Fremont Experiment Station.	Fountain.....				T.						.16					T.	.15					T.											T.	
Garfield.....	Little Arkansas.....			.05	.02	.02					.37					T.	T.																	T.
Hamps.....	Big Sandy.....										.05	.07																						T.
Hermit Lake.....	Grape Creek.....										.16																							T.
Hoehne (near).....	Purgatoire.....										.35	T.																						T.
Holly.....	Arkansas.....										.25																							T.
Lake Moraine.....	Fountain.....										.12	.05																						T.
Lamar.....	Arkansas.....																																	T.
Las Animas.....	do.....																																	T.
La Veta Pass.....	Cucharas.....																																	T.
Leadville.....	Arkansas.....			T.	T.	.01					.20	T.																						T.
Limon (near).....	Big Sandy.....					.01					.10	.02																						T.
Madrid.....	Purgatoire.....										.03	.05																						T.
Marshall Pass.....	Arkansas.....										.38	.21																						T.
Maxey.....	do.....											.65																						T.
Monument.....	Fountain.....																																	T.
North Lake.....	Purgatoire.....										.03	T.																						T.
Pueblo.....	Arkansas.....										T.																							T.
Rocky Ford (near)..	do.....																																	T.
St. Elmo.....	Chalk Creek.....			T.							.13																							T.
Salida	Arkansas.....											.15																						T.
Santa Clara.....	Huerfano.....										.12	.14																						T.
Sheridan Lake.....	Arkansas.....																																	T.
Stonewall.....	Purgatoire.....																																	T.
Trinidad.....	do.....										.03	.33																						T.
Two Buttes.....	Arkansas.....										.03	.25																						T.
Two Buttes Reservoir.	do.....											.45																						T.
Victor.....	Oil Creek.....			T.																														T.
Vilas.....	Cimmaron.....										T.																							T.
Wayne.....	Arkansas.....																																	T.
Westcliffe.....	Grape Creek.....																																	T.
Winfield.....	Clear Creek.....			.01	T.	T.				.08	.01																							T.
Woodman Sanatorium.	Fountain.....	.20		.01	T.	T.					*	.11				.01						.03	.03										T.	
Wortman.....	Arkansas.....																																	T.
New Mexico.																																		
Abbott.....	Canadian.....																																	T.
Albert.....	do.....																																	T.
Aurora.....	do.....			.06								.04																						T.
Bell Ranch.....	do.....																																	T.
Black Lake.....	do.....			.07								.29																						T.
Cabeza.....	do.....																																	T.
Campana.....	do.....																																	T.
Chacon.....	do.....																																	T.
Cimarron (near)....	do.....																																	T.
Clovis.....	Red.....																																	T.
Cuervo.....	Canadian.....																																	T.
Dawson.....	do.....																																	T.
Elizabethtown.....	do.....																																	T.
Folsom.....	Dry Cimarron.....										.22																							T.
Fort Union.....	Canadian.....										.94																							T.
Hayden.....	do.....																																	T.
Hoosier Ranch.....	do.....												.03																					T.
Johnsons Park.....	do.....																																	T.
Johnsons Ranch.....	do.....											.04																						T.
Kappus.....	do.....																																	T.
Lake Alice.....	do.....				T.																													T.
Logan.....	do.....																																	T.
Lykins (near).....	Red.....																																	T.
Maxwell (near).....	Canadian.....																																	T.
Melrose.....	Red.....																																	T.
Miami Ranch.....	Canadian.....																																	T.
Mills (near).....	do.....																																	T.
Montoya.....	do.....																																	T.
Mount Dora (near)....	do.....																																	T.
Nara Visa.....	do.....																																	T.
Palo Verde.....	do.....																																	T.
Pasamonte.....	do.....																																	T.
Pleasant View.....	do.....																																	T.
Portales.....	Red.....																																	T.
Raton.....	Canadian.....																																	T.
Rociada.....	do.....												T.																					T.



TABLE 2.—Daily precipitation for November, 1912. District No. 7—Continued.

[illegible]



TABLE 2.—Daily precipitation for November, 1912. District No. 7—Continued.

Stations.	Watershed.	Day of month.																														Total.				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30					
Oklahoma.																																				
Ada.....	Canadian.....					.56																											0.64			
Alva.....	Arkansas.....					T.																					T.		.05			.03	T.	0.31		
Apache.....	Red.....	.02				.12																.17											T.	0.31		
Arapaho.....	Washita.....																											T.						T.	2.37	
Ardmore   .....	Red.....	.47				1.90																												2.37		
Arnett.....	Canadian.....																																	0.41		
Bartlesville.....	Arkansas.....					.41																												0.41		
Beaver.....	Canadian.....																											.20						0.20		
Blackburn.....	Arkansas.....																																	0.34		
Cache.....	Red.....					.20						.14																						0.34		
Calvin.....	Canadian.....	.45				.12	1.36																											1.02		
Chandler   .....	do.....	T.				1.10																						T.		T.				1.10		
Chattanooga.....	Red.....																																	3.00		
Chickasha.....	Washita.....					.15							T.									T.												0.15		
Cloud Chief.....	do.....					.08							.15																		T.			0.23		
Crawford.....	Canadian.....																																	1.33		
Durant   .....	Red.....	.98				.02	.33																											0.00		
Eldorado.....	do.....																																	T.	0.04	
Elk City.....	do.....																																		1.76	
Ei Reno.....	Canadian.....					.04																												T.	0.04	
Enid   .....	Cimarron.....	.10				.06																													0.36	
Erick.....	Red.....																					T.		.20										T.	0.36	
Eufaula.....	Canadian.....					.80	.05																											T.	0.36	
Fairland.....	Arkansas.....					1.62	.34																												1.96	
Fort Gibson.....	do.....	.68				.10	.98																												1.96	
Frederick.....	Red.....					.02																													1.76	
Geary.....	Canadian.....					.03							.11																					0.02		
Goodwell.....	do.....												.06														T.			.03				0.17		
Guthrie.....	Cimarron.....																																		0.26	
Guymon.....	Canadian.....																											T.			.20				T.	0.26
Hartshorne.....	do.....					.47	.45																												T.	0.92
Healdton.....	Red.....					1.15																													1.15	
Helena.....	Cimarron.....												.03																						0.13	
Hennessey.....	do.....					T.																													T.	0.13
Hobart.....	Red.....					.13																													T.	0.13
Holdenville   .....	Canadian.....	.45				.75																													1.20	
Hooker.....	do.....																																		0.05	
Hurley.....	Cimarron.....																																		T.	0.05
Idabel.....	Red.....																																		T.	0.05
Jefferson.....	Arkansas.....																																		0.04	
Kenton.....	Cimarron.....	T.				.11																													0.13	
Kingfisher.....	do.....	.04				.40							.18																						0.72	
Lawton.....	Red.....					.02																	.04												0.02	
McAlester.....	Canadian.....					1.10	.06																												1.35	
Mangum   .....	Red.....					.03																													0.78	
Marlow   .....	Washita.....	.10				.35																													.75	0.45
May.....	Canadian.....																																		0.00	
Meeker.....	do.....																																		1.10	
Muskogee.....	Arkansas.....					1.10																													T.	1.10
Mutual.....	Canadian.....																																		T.	0.11
Neola.....	Washita.....					.07							.04																						T.	0.11
Newkirk.....	Arkansas.....					.97																													0.97	
Norman.....	Canadian.....					1.90																													1.92	
North Muskogee.....	Arkansas.....	.68				1.00	1.31																												2.99	
Oakwood.....	Canadian.....					.01																													0.03	
Okeene.....	Cimarron.....					.02							.04																						0.12	
Okemah.....	Canadian.....					1.50	.10																												1.60	
Oklahoma.....	do.....					.38																													0.39	
Okmulgee.....	do.....					1.55																													1.80	
Pauls Valley.....	Washita.....					.81																													0.81	
Pawhuska.....	Arkansas.....					.30																													0.40	
Perry.....	do.....					.10																													0.12	
Rankin.....	Red.....												.07																						0.12	
Ravia.....	Washita.....					.16	.36																												0.52	
Sac and Fox Agency.....	Canadian.....					.60																													0.60	
Shawnee   .....	do.....	.13					1.21																												1.34	
Snyder.....	Red.....					.16																													0.26	
Stillwater   .....	Cimarron.....					T.																													T.	2.06
Tulsa     .....	Arkansas.....	.20				.04	1.80																												1.50	
Vinita.....	do.....																																		0.33	
Wagoner.....	do.....					1.50																													0.46	
Waukomis.....	Cimarron.....					.33																													0.11	
Weatherford   .....	Red.....	.04				.22																													0.00	
Webbers Falls.....	Canadian.....						.03																													



TABLE 2.—Daily precipitation for November, 1912. District No. 7—Continued.

[illegible]



TABLE 2.—Daily precipitation for November, 1912. District No. 7—Continued.

[illegible]

\* Precipitation included in that of the next measurement.  
 † Separate dates of falls not recorded.  
 ‡ Precipitation for the 24 hours ending on the morning when it is measured.  
 T. Precipitation is less than 0.01 inch rain or melted snow.



TABLE 3.—Maximum and minimum temperatures at selected stations for November, 1912. District No. 7, Lower Mississippi Valley.

Date.	Colorado.						New Mexico.				Texas.				Kansas.										Oklahoma.			
	Lamar.		Leadville.		Pueblo.		Albert.		Cimarron.		Amarillo.		Paris. §§		Dodge City.		Ellinwood.		Iola.		Liberal.		Wichita.		Ardmore. §§		Bartlesville.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	69	25	41	- 2	50	20	56	24	52	16	49	27	56	38	43	22	40	29	37	23	49	25	38	30	51	35	40	35
2....	68	21	41	7	57	18	62	26	63	19	63	27	54	27	63	18	61	20	50	22	70	16	50	27	50	27	54	24
3....	68	33	31	20	60	34	66	31	52	16	69	34	61	27	67	39	60	39	56	33	72	35	57	35	61	35	58	35
4....	60	26	40	11	57	39	55	27	59	20	67	33	72	32	65	33	68	40	67	45	62	30	64	38	73	48	71	45
5....	58	39	31	10	55	31	51	21	56	32	63	41	68	42	60	37	61	43	65	51	63	35	65	48	70	58	63	50
6....	65	22	41	9	66	20	59	27	64	14	64	32	66	50	63	24	65	26	60	35	63	27	60	37	65	47	64	48
7....	73	32	44	25	71	37	63	31	70	31	73	39	70	38	73	35	75	36	65	31	75	32	64	39	71	36	70	33
8....	66	30	50	25	57	34	63	34	66	32	69	43	78	38	67	41	70	37	65	37	71	33	65	43	76	43	70	40
9....	78	31	49	25	77	31	58	27	75	25	76	39	78	44	81	40	76	38	73	38	83	35	74	46	77	50	79	40
10....	77	34	49	26	69	38	59	19	68	28	78	44	75	47	81	41	79	45	75	54	84	40	73	52	76	50	78	50
11....	72	35	32	21	63	35	68	21	58	30	75	46	79	49	73	43	72	58	70	58	79	54	68	58	76	58	75	55
12....	55	30	34	11	60	31	76	27	58	17	58	35	67	58	54	34	65	36	64	39	67	35	61	39	63	54	61	50
13....	63	27	45	9	59	20	83	30	61	21	67	33	65	43	64	31	65	32	62	33	67	33	63	34	64	40	65	37
14....	68	23	49	16	66	23	62	22	67	27	70	30	78	40	70	32	64	31	56	34	70	32	62	40	75	40	64	38
15....	64	24	45	18	66	26	67	18	61	27	69	34	71	41	69	33	68	31	65	31	69	29	68	37	74	40	65	34
16....	51	31	37	10	48	28	69	19	48	34	48	34	67	42	44	31	58	34	51	33	48	34	50	36	70	42	55	40
17....	60	18	44	9	55	17	74	20	66	22	57	25	64	41	56	20	56	19	55	27	57	22	51	27	61	39	59	35
18....	65	22	55	14	74	17	72	19	64	24	63	30	69	35	71	27	73	29	65	29	74	27	66	32	68	34	70	32
19....	63	20	53	17	65	18	81	23	67	25	67	34	73	35	68	26	73	26	70	38	72	23	66	36	70	42	72	45
20....	64	19	36	17	62	22	76	31	61	12	65	34	73	37	65	41	69	43	68	45	67	34	67	45	71	39	77	45
21....	52	18	37	7	52	28	78	30	51	27	48	33	69	39	52	27	63	29	56	33	54	30	55	37	69	48	56	42
22....	64	21	41	13	70	19	72	21	64	20	65	24	67	47	66	25	68	24	63	25	68	24	61	30	64	43	65	29
23....	60	21	42	13	57	22	68	20	65	25	60	33	70	34	60	27	60	31	49	36	62	29	51	40	63	36	52	43
24....	52	17	43	14	42	21	68	24	59	23	48	27	59	34	40	21	49	19	39	22	46	23	41	23	51	33	43	29
25....	47	21	34	11	46	17	72	21	52	15	50	24	52	31	47	22	49	19	46	19	49	19	46	24	50	28	49	20
26....	46	25	27	7	47	15	67	22	38	10	50	24	59	33	45	25	42	19	45	25	50	19	42	27	50	30	48	28
27....	40	9	35	3	39	8	73	15	39	4	42	13	51	36	36	14	34	14	41	24	38	12	38	23	46	35	46	28
28....	60	17	41	16	68	20	74	19	67	10	66	24	45	21	58	23	53	23	52	24	57	20	53	26	55	25	56	24
29....	55	25	42	11	53	23	82	18	55	28	55	33	62	22	51	28	55	25	53	32	52	19	54	33	65	39	58	34
30....	64	21	41	15	55	18	72	12	60	12	62	29	62	32	60	26	58	24	58	31	64	22	61	36	58	50	58	33
Mns..	61.6	24.6	41.0	13.6	58.7	24.3	68.2	23.3	59.9	21.5	61.9	31.9	66.0	37.8	60.4	29.5	61.6	30.6	58.0	33.6	63.4	28.3	57.8	35.9	64.4	40.8	61.2	37.4

Date.	Oklahoma.										Missouri.										Blandville, Ky.		Jackson, Tenn.					
	Enid. §§		McAlester.		Mangum. §§		Muskogee.		Oklahoma.		Weatherford. §§		Woodward.		Caruthersville.		Iron-ton. §§		Lamar. §§		Olden.		Springfield.					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.				
1....	60	38	50	36	53	33	45	35	42	28	47	32	47	27	61	42	46	34	40	31	49	34	36	52	49	40	73	42
2....	55	28	56	26	61	24	53	27	53	26	56	24	68	19	56	33	47	25	50	22	48	25	45	25	48	31	73	36
3....	60	33	61	37	66	25	62	33	61	37	61	27	63	39	56	26	58	18	62	27	55	28	57	30	54	28	74	25
4....	61	40	74	52	73	34	70	48	68	47	69	37	71	32	65	40	64	40	66	40	63	34	66	44	62	40	64	33
5....	69	48	71	60	75	39	63	58	67	50	72	38	72	44	71	56	59	40	61	52	58	52	56	51	66	56	69	49
6....	71	41	65	50	70	42	68	42	62	41	64	39	67	30	67	45	64	52	62	47	59	51	56	44	63	55	67	55
7....	71	43	71	36	72	35	70	35	69	39	71	37	73	35	71	44	64	32	66	33	64	34	62	35	69	39	64	50
8....	72	40	78	42	78	37	75	40	74	43	72	36	70	32	78	34	65	31	67	35	71	38	64	46	65	41	70	33
9....	72	44	78	46	79	40	77	46	76	52	76	37	81	33	70	33	66	25	75	38	67	35	71	43	64	36	71	32
10....	70	41	76	55	75	40	75	50	73	52	74	44	80	53	78	45	75	45	75	45	75	45	73	52	74	46	70	40
11....	71	56	77	60	80	42	76	55	75	56	75	49	74	56	76	50	74	45	74	49	74	52	73	56	71	55	76	41
12....	74	43	71	53	65	44	71	48	65	42	59	45	69	41	73	58	72	57	69	60	74	58	66	40	70	58	73	38
13....	54	34	65	40	77	37	62	38	64	38	69	34	69	32	70	45	53	41	59	33	58	41	54	39	68	44	73	38
14....	67	36	74	45	76	33	69	38	73	44	74	35	72	29	64	34	51	31	58	33	59	37	53	35	51	36	57	32
15....	66	37	74	41	55	35	66	44	73	46	70	38	74	28	60	27	54	18	65	34	55	27	57	34	53	28	56	24
16....	70	40	71	40	56	31	61	40	59	38	51	38	59	30	66	25	65	24	54	36	65	36	58	36	61	31	61	23
17....	74	30	60	38	62	30	60	34	55	30	59	30	59	23	62	34	56	24	58	24	57	32	55	31	57	32	62	24
18....	75	32	68	33	70	29	68	30	68	35	71	30	74	29	68	24	64											



TABLE 3.—Maximum and minimum temperatures at selected stations for November, 1912. District No. 7—Continued.

Date.	Tennessee.				Arkansas.																Mississippi.							
	Kenton.		Memphis.		Bentonville.		Corning.		Dardanelle. §§		El Dorado. §§		Fort Smith.		Little Rock.		Pine Bluff. §§		Texarkana. §§		Wynne. §§		Clarksdale. §§		Corinth. §§		Greenville. §§	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	73	42	53	42	40	33	58	42	58	42	67	49	49	35	52	41	56	44	60	42	52	43	53	45	50	48	52	47
2....	46	34	48	37	49	24	50	33	54	32	53	29	51	29	49	34	54	32	60	29	49	31	52	33	48	36	54	37
3....	54	22	55	36	59	28	57	24	60	28	60	29	62	32	56	33	60	27	64	26	56	26	58	26	58	24	61	28
4....	.....	.....	66	43	66	48	65	37	66	41	72	46	70	48	59	45	73	32	68	44	67	34	69	31	62	26	73	34
5....	.....	.....	69	56	59	54	67	35	67	50	70	57	61	56	67	57	70	43	77	45	70	55	71	38	70	38	72	38
6....	68	36	64	53	55	40	67	55	72	55	76	54	62	47	67	53	69	54	77	56	66	56	69	54	68	50	71	55
7....	68	37	62	46	66	33	67	37	69	42	69	47	67	38	68	47	68	44	79	40	68	43	66	46	64	52	69	49
8....	63	43	70	47	71	39	73	35	77	37	76	47	74	40	74	46	77	38	78	45	72	37	76	37	73	36	75	38
9....	68	31	68	50	71	44	70	32	72	39	78	50	76	48	71	50	78	48	79	49	70	36	73	37	70	36	78	41
10....	65	29	73	53	72	54	77	43	77	39	78	53	76	48	74	51	77	42	80	52	76	50	73	41	76	38	78	45
11....	74	42	74	55	73	59	74	56	76	51	89	55	76	55	73	54	77	49	78	48	76	53	76	45	74	46	79	49
12....	74	51	75	55	67	42	75	60	78	50	79	63	70	48	77	52	78	50	72	46	76	62	76	51	72	50	77	52
13....	74	54	55	47	58	35	73	47	65	48	63	52	62	41	60	49	65	45	69	56	59	45	55	45	54	47	61	48
14....	70	54	59	43	62	36	58	35	71	35	73	35	70	39	68	45	70	37	78	34	62	37	66	34	60	35	72	37
15....	51	31	53	36	66	36	56	25	69	35	65	41	62	43	58	37	61	38	70	44	56	29	59	34	54	28	63	39
16....	52	23	59	38	61	37	64	26	62	32	67	33	65	42	64	37	64	32	76	35	62	28	72	29	64	24	66	32
17....	58	21	55	39	58	32	58	28	62	35	60	40	60	40	58	43	59	32	66	34	57	36	59	29	58	25	62	34
18....	58	28	60	34	63	34	61	32	65	29	67	34	65	33	65	35	67	26	70	30	62	24	64	24	64	24	66	29
19....	59	21	67	45	68	44	71	39	72	31	71	32	72	38	69	41	69	26	73	32	71	40	70	24	69	25	71	28
20....	67	33	67	46	67	46	70	40	72	32	67	33	72	44	66	45	67	33	73	35	63	44	70	32	68	34	72	30
21....	70	32	68	52	65	43	65	32	65	35	70	40	67	45	62	42	68	34	75	40	64	39	70	34	72	38	71	35
22....	63	37	60	45	59	33	63	35	63	34	59	51	64	41	61	47	60	36	68	50	58	40	62	48	67	44	66	52
23....	59	29	60	42	51	34	57	33	65	29	71	40	60	33	63	40	70	36	68	32	62	34	67	37	64	34	72	42
24....	45	27	44	36	40	25	49	29	52	31	59	28	47	34	46	37	62	29	66	24	50	30	51	31	46	30	55	36
25....	44	17	47	32	46	20	46	19	47	22	56	26	48	29	50	29	53	23	56	21	50	21	54	22	50	20	55	26
26....	51	28	50	38	45	29	46	30	65	27	57	36	53	34	51	38	59	25	60	28	49	28	58	22	54	21	62	29
27....	50	28	43	35	40	26	51	35	48	33	46	38	45	32	45	34	48	35	56	26	46	36	42	31	41	32	43	39
28....	46	16	47	31	49	24	47	19	55	20	53	26	53	24	50	26	52	21	49	18	49	21	50	23	48	20	52	25
29....	57	30	57	34	56	38	56	31	55	28	60	32	59	33	57	34	63	21	62	33	60	33	59	23	54	20	61	27
30....	66	42	60	42	55	49	60	44	62	35	66	40	60	51	62	48	62	31	66	42	62	44	61	32	62	30	65	33
Mns..	60.5 <sup>b</sup>	32.8 <sup>b</sup>	59.6	42.9	58.6	37.3	61.7	35.6	64.7	35.9	66.6	41.2	62.6	40.0	61.4	42.3	65.2	35.4	69.1	37.9	61.3	37.8	63.5	34.6	61.1	33.7	65.8	37.8

Date.	Mississippi.												Louisiana.													
	Kosciusko. §§		Natchez. §§		Vicksburg.		Alexandria. §§		Baton Rouge. §§		Covington. §§		Lafayette. §§		Lake Charles. §§		Monroe. §§		New Orleans.		Robeline. §§		Schriever.		Shreveport.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	50	50	66	50	61	43	58	47	56	55	62	58	60	50	64	43	54	47	70	49	60	45	62	58	56	40
2.....	53	33	64	36	51	37	56	34	62	39	62	38	57	35	65	34	55	34	56	47	56	30	58	35	53	32
3.....	60	26	66	34	61	35	60	30	65	35	61	31	66	28	67	35	61	28	57	42	58	28	60	30	61	33
4.....	69	31	74	27	70	39	74	33	75	39	78	32	79	37	76	27	75	33	72	48	78	26	65	34	75	44
5.....	73	37	74	34	73	55	77	41	80	57	76	48	80	46	79	42	73	50	71	60	69	24	83	37	74	58
6.....	63	56	70	61	70	55	80	59	78	61	80	59	82	60	78	49	76	60	76	63	68	59	80	47	68	54
7.....	68	52	69	52	66	51	71	50	75	54	76	55	77	50	76	48	71	50	70	58	74	45	74	52	70	48
8.....	75	35	63	35	71	44	72	40	78	42	79	42	75	39	77	50	75	39	70	56	79	34	76	42	76	44
9.....	75	40	67	33	76	51	78	40	79	44	80	43	81	41	80	42	79	42	76	58	80	35	78	42	78	46
10.....	79	38	78	38	76	54	77	42	81	47	80	41	81	42	81	41	80	42	77	56	83	34	79	41	79	48
11.....	77	46	80	44	78	54	79	52	79	53	79	49	85	52	82	40	80	47	79	60	82	40	84	62	80	53
12.....	78	54	65	44	75	61	80	52	83	60	83	58	86	58	83	29	81	61	81	63	84	54	85	52	79	55
13.....	59	48	60	38	64	45	65	48	68	55	70	57	68	53	84	28	65	46	66	54	69	46	66	56	66	46
14.....	70	34	71	36	69	38	70	37	74	42	73	40	73	37	85	31	73	36	66	50	71	30	72	38	73	42
15.....	62	32	67	38	65	43	70	37	73	43	73	40	75	39	86	33	66	40	66	52	73	29	73	42	71	44
16.....	64	27	60	36	66	41	67	40	69	39	70	34	69	40	81	35	68	34	63	46	70	29	69	35	67	43
17.....	63	32	71	30	65	40	69	34	70	37	73	32	75	38	82	36	67	35	65	47	67	28	69	33	64	43
18.....	68	26	69	35	57	37	65	42	73	40	73	34	72	39	84	37	66	32	65	49	66	26	72	36	66	39
19.....	71	25	74	34	68	39	66	32	78	39	70	33	71	32	83	39	71	29	67	51						



## CLIMATOLOGICAL DATA R NOVEMBER, 1912.

## DISTRICT No. 8, TEXAS AND RIO GRANDE VALLEY.

B. BUNNEMEYER, District Editor.

## GENERAL SUMMARY.

The weather during November was generally pleasant and favorable for outdoor work. The number of crisp, sunshiny days was unusually large, and there were no severe storms. While cold weather occurred on several days, there was a marked absence of either very cold or very warm conditions, and as a rule the days were uniformly warm and the nights cool. A cold wave of short duration overspread the district on the 27th and 28th, and was attended by killing frosts nearly to the coast line. In the northern and western portions of Texas, however, killing frosts occurred as early as the 1st to 3d, which is considerably earlier than the average date for this section.

The precipitation was decidedly deficient, except in a few counties in western and southwestern Texas, and in the extreme southern portion of New Mexico, which had a slight excess. In a large number of localities in northwest Texas and in the northern portions of the district there was very little or no precipitation. The average number of days with 0.01 inch or more of precipitation was only 1 in New Mexico, and 2 in Colorado and in Texas. Most of the precipitation occurred on the 11th in Colorado, on the 16th in New Mexico, and on the 21st or 22d in Texas. Snow was confined to the higher mountain sections, and the fall was generally light, the heaviest monthly amount being 22.7 inches, at Anchor Mine, N. Mex. At the close of the month the average depth of snow on the upper Rio Grande watershed was 2 inches at an altitude of 9,500 feet.

The greatest monthly amount of precipitation in Colorado was 0.58 inch, at Cumbres; in New Mexico, 1.75 inches, at Newman; and in Texas, 3.84 inches, at Boerne. Less than 0.01 inch occurred at 4 stations in Colorado, at 27 in New Mexico, and at 12 in Texas. Excessive precipitation of 2.50 inches or more in 24 consecutive hours was reported from 10 stations in Texas, mostly in central and southwestern counties, the greatest amount being 3.75 inches, at Boerne, on the 21st.

## TEMPERATURE.

The monthly mean temperature was 0.6° above the normal in Colorado, 1.5° below in New Mexico, and 1.1° below in Texas. For the district as a whole, it averaged about 1° below, although it exceeded the normal in the upper Rio Grande Valley and over a broad area extending through the interior of Texas from the Rio Grande to the Red River. The coldest weather occurred on the 27th-28th, although in many northern localities the 2d was the coldest day of the month. The warmest weather occurred generally between the 8th and 15th, and from the 3d to the 26th the daily temperatures approximated or were slightly above the normal.

The highest and lowest temperatures reported were, respectively, in Colorado, 67° at Manassa on the 9th and at Saguache on the 8th, and -7° at Hermit on the 1st; in New Mexico, 87° at Lakewood on the 9th, and 0° at Bluewater on the 25th; and in Texas, 90° at Killeen on the 14th and at Brighton on the 15th, and 17° at Fort Davis on the 14th. The local monthly means ranged

from 24.2° to 35.2° in Colorado, from 31.8° to 50° in New Mexico, and from 47.8° to 64.6° in Texas.

## PRECIPITATION.

The precipitation over the Rio Grande watershed was decidedly deficient except locally in the vicinity of El Paso and of Eagle Pass, Tex. At nearly 40 per cent of the reporting stations in Colorado and New Mexico there was practically no fall of moisture. The average for the watershed, 0.37 inch, was about 40 per cent of the normal amount.

In the Rio Pecos watershed the precipitation was markedly deficient north of Carlsbad, N. Mex., while south of that station it was about double the normal amount. The total for the watershed averaged 0.60 inch, or about 75 per cent of the normal.

The Texas watersheds showed a general shortage of precipitation, the deficiencies ranging from 0.02 inch for the Lavaca watershed to 3.28 inches for that of the Neches. The San Antonio was the only watershed that had a slight excess. There was little or no precipitation over the headquarters of the Colorado and Brazos Rivers. The following are the average amounts in inches and hundredths for the various watersheds: Nueces, 1.33; San Antonio, 2.26; Guadalupe, 2.46; Lavaca, 2.98; Colorado, 1.56; Brazos, 0.87; Trinity, 0.63; Neches, 0.72; Sabine, 0.90; and coastal plains, 1.14.

## RIVER CONDITIONS.

No rises of consequence occurred in any of the streams of the district, and they were practically at low-water mark throughout the month. In the upper Rio Grande Valley water for stock was becoming scarce.

## MISCELLANEOUS.

*Meteor.*—Mr. H. H. Martin, assistant observer, made the following report of a meteor observed by him at Fort Worth, Tex.:

On Sunday November 10, at 5.55 a. m., a meteor of unusual brilliance was observed at about 45° altitude and 20° azimuth, or in the vicinity of the second magnitude star Alphard of the constellation Hydra. It moved slowly across the western sky near Procyon in Canis Minor, thence northerly into the constellation Auriga, where it disappeared behind housetops without exploding. The phenomenon was visible for 20 seconds. The diameter of the ball was about one-sixth that of the full moon. At the point of origin the meteor was dazzlingly white, casting a faint shadow. Near Procyon it was red with a train of whitish blue vapor. At the time of its disappearance it was whitish blue and the train was lurid and fiery. A faint rattle like distant musketry could be heard as it passed Procyon.

*Thunderstorm.*—Dr. I. N. Woodman, cooperative observer, Virsylvia, N. Mex., furnished the following report:

A severe electric storm occurred on the 11th, although little rain fell, and the storm was local in character. For the second time this year lightning struck the instrument shelter, doing no little damage. The shelter stands on a tripod, with the rain gage a few feet away. Both thermometers were broken and the bottom of the overflow of the rain gage was melted off. A nail driven into the post of the shelter and on which the key to the shelter was kept, disappeared and no trace of it could be found.



TABLE 1.—Climatological data for November, 1912. District No. 8, Texas and Rio Grande Valley.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Colorado.																				
Blanca.....	Costilla.....	7,865	3	31.2	.....	66	8	1	27	50	T.	.....	T.	T.	0	24	5	1	w.	Dr. L. C. Audrain.
Cumbres.....	Conejos.....	10,015	5	.....	.....	.....	.....	.....	.....	.....	0.58	.....	0.23	4.5	4	22	6	2	sw.	Mrs. Ida M. Lively.
Garnett.....	Costilla.....	7,576	19	30.2	+ 0.2	64	9	- 2	27	51	T.	- 0.33	T.	0	0	21	6	3	sw.	Chas. Spelser.
Hermit.....	Hinsdale.....	9,843	5	24.2	.....	53	8	- 7	1	54	0.45	.....	0.60	6.0	1	20	5	5	.....	Marion Mason.
La Veta Pass.....	Costilla.....	9,000	2	.....	.....	.....	.....	.....	.....	.....	0.11	.....	0.11	2.0	1	23	5	2	w.	Clara M. Wright.
Manassa.....	Conejos.....	7,700	6	31.6	.....	67	9	0	27	59	T.	.....	T.	0	0	23	5	1	sw.	J. B. Chapman.
Platoro.....	do.....	9,675	5	.....	.....	.....	.....	.....	.....	.....	0.50	.....	0.24	7.5	3	22	5	3	w.	Walter R. Hook.
Saguache.....	Saguache.....	7,740	20	35.2	+ 1.9	67	8	5	28	49	0.00	- 0.30	0.00	0	0	24	1	5	w.	Eugene Williams.
San Luis.....	Costilla.....	7,794	21	33.8	0.0	65	10	6	2	54	0.12	- 0.31	0.11	1.0	2	20	8	2	sw.	P. B. Albright.
Wagon Wheel Gap Experiment Station.	Mineral.....	9,235	1	26.8	+ 0.4	53	9	3	1	34	0.46	- 0.57	0.37	9.5	3	21	4	5	w.	U. S. Weather Bureau.
New Mexico.																				
Agricultural College.....	Dona Ana.....	3,863	51	46.2	- 3.3	79	10	19	28	48	0.32	- 0.24	0.17	0	3	22	4	4	se.	N. Mex. Agr. College.
Alamogordo (near).....	Otero.....	4,338	15	45.7	- 5.0	75	9	17	28	45	T.	- 0.68	T.	0	0	24	5	1	sw.	Edward Le Breton.
Alamogordo.....	do.....	4,320	3	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	.....	.....	.....	.....	Agent E. P. & S. W. R. R.
Alamos Ranch.....	Sandoval.....	7,800	2	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	28	0	2	s.	H. H. Brook.
Albuquerque.....	Bernalillo.....	5,000	36	.....	.....	.....	.....	.....	.....	.....	0.00	- 0.49	0.00	0	0	24	5	1	w.	Pitt Ross, C. E.
Ancho.....	Lincoln.....	6,112	3	.....	.....	.....	.....	.....	.....	.....	0.02	.....	0.02	0.8	1	.....	.....	.....	.....	Agent E. P. & S. W. R. R.
Anchor Mine.....	Taos.....	10,600	1	.....	.....	.....	.....	.....	.....	.....	1.44	.....	0.61	22.7	3	22	4	4	w.	Charles H. Brigham.
Artesia.....	Eddy.....	3,350	4	47.7	.....	82	7	20	2	54	0.70	.....	0.45	0	2	24	2	4	se.	Will Benson, C. E.
Aspen Grove Ranch.....	Rio Arriba.....	9,000	3	.....	.....	.....	.....	.....	.....	.....	0.35	.....	0.24	5.3	2	22	8	0	.....	Junius D. Maupin.
Batemans Ranch.....	do.....	8,900	3	.....	.....	.....	.....	.....	.....	.....	1.08	.....	0.71	16.5	3	23	3	4	w.	John W. Bateman.
Berino.....	Dona Ana.....	3,788	1	.....	.....	.....	.....	.....	.....	.....	0.85	.....	0.50	0	2	.....	.....	.....	.....	J. C. Rishaberger.
Bluewater.....	Valencia.....	6,732	10	34.3	- 3.0	75	9	0	25	67	T.	- 0.39	T.	0	0	23	7	0	w.	Bluewater Development Co.
Boaz.....	Chaves.....	4,154	3	45.4	.....	77	8	12	28	55	0.10	.....	0.08	0	2	27	2	1	sw.	William Horner.
Capitan.....	Lincoln.....	6,348	3	.....	.....	.....	.....	.....	.....	.....	0.36	.....	0.16	4.5	3	22	3	5	e.	Agent E. P. & S. W. R. R.
Carlsbad.....	Eddy.....	3,120	17	50.0	- 2.3	84	9	20	28	53	0.85	+ 0.14	0.85	0	1	25	1	4	e.	U. S. Reclamation Service.
Carrizozo.....	Lincoln.....	5,429	4	42.0	.....	70	8	17	28	40	T.	.....	T.	0	0	26	4	0	sw.	Agent E. P. & S. W. R. R.
Cerrillos (near).....	Santa Fe.....	5,700	.....	36.2	.....	62	24	10	22	50	T.	.....	T.	0	0	22	7	1	w.	Irving C. Sweet.
Chama.....	Rio Arriba.....	7,851	14	35.1	- 1.9	63	9	6	1	38	0.16	- 1.06	0.16	2.0	1	26	3	1	sw.	Frank C. Johnson.
Cloudcroft.....	Otero.....	8,650	10	37.0	+ 1.4	59	21	12	27	38	0.59	- 0.97	0.52	8.0	2	28	1	1	sw.	Agent E. P. & S. W. R. R.
Corona.....	Lincoln.....	6,666	3	42.5	.....	75	8	6	27	50	0.04	.....	0.04	1.0	1	21	8	1	sw.	Do.
Coyote.....	do.....	5,800	3	.....	.....	.....	.....	.....	.....	.....	0.05	.....	0.05	T.	1	27	1	2	sw.	Do.
Cundiyo.....	Santa Fe.....	6,889	3	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	24	6	0	w.	Juan Vijil.
Demonstration Farm.....	San Miguel.....	6,800	3	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	.....	.....	.....	.....	Erb & Westerman.
Duran.....	Torrance.....	6,272	3	44.2	.....	72	9	8	27	42	0.20	.....	0.20	2.0	1	27	2	1	.....	Agent E. P. & S. W. R. R.
Escondido.....	Otero.....	4,014	3	.....	.....	.....	.....	.....	.....	.....	0.35	.....	0.30	0	2	28	0	2	se.	Do.
Espanola.....	Rio Arriba.....	5,590	14	36.9	- 2.2	68	10	6	28	47	0.18	- 0.57	0.18	0	1	25	3	2	n.	Mrs. E. F. McBride.
Estancia.....	Torrance.....	6,140	7	35.8	.....	74	9	3	22	56	0.06	- 0.56	0.06	0	1	23	1	6	w.	George H. Van Stone.
Fort Stanton.....	Lincoln.....	6,231	35	42.6	+ 0.8	78	8	13	22	51	0.25	- 0.56	0.25	2.5	1	23	5	2	w.	U. S. Sanitarium.
Fort Sumner.....	Guadalupe.....	3,960	4	43.2	.....	83	7	11	27	54	0.07	.....	0.07	0	1	25	4	1	sw.	Peter Yocky.
Gallinas.....	Lincoln.....	6,635	3	.....	.....	.....	.....	.....	.....	.....	T.	.....	T.	0	0	24	0	6	w.	Agent E. P. & S. W. R. R.
Gallinas Planting Sta.	San Miguel.....	7,500	5	40.0	.....	73	9	4	27	49	0.16	.....	0.10	2.0	2	23	5	2	w.	U. S. Forest Service.
Glorieta Ranch.....	Socorro.....	5,700	2	.....	.....	.....	.....	.....	.....	.....	0.11	.....	0.05	0.6	3	23	3	4	s.	Charles M. Crossman.
Harvey's Upper Ranch.....	San Miguel.....	9,400	3	34.8	.....	57	9	9	1	31	0.21	.....	0.15	3.5	3	23	6	1	w.	R. B. Schoonmaker.
Hondo Reservoir.....	Chaves.....	3,904	3	45.7	.....	81	10	15	28	50	0.62	.....	0.62	T.	0	26	1	3	se.	U. S. Reclamation Service.
Jemez Springs.....	Sandoval.....	6,100	2	40.0	.....	65	9	15	27	36	T.	.....	T.	0	0	20	5	5	sw.	Mrs. L. L. Shields.
Knowles (near).....	Eddy.....	4,300	2	46.0	.....	79	8	19	2	49	0.03	.....	0.03	0	1	24	4	2	sw.	J. W. Moseley.
Laguna.....	Valencia.....	5,840	7	40.2	.....	70	9	11	29	48	0.00	.....	0.00	0	0	.....	.....	.....	.....	Gus Weiss.
Lagunita.....	Guadalupe.....	4,500	7	.....	.....	78	10	8	29	48	0.00	.....	0.00	0	0	.....	.....	.....	.....	P. A. Turnbull.
Lake Valley.....	Sierra.....	5,412	7	.....	.....	.....	.....	.....	.....	.....	0.05	.....	0.05	T.	1	20	8	2	sw.	William P. Kell.
Lakewood (near).....	Eddy.....	3,170	.....	48.2	.....	87	9	17	28	52	0.65	.....	0.65	0	2	25	3	2	se.	Mrs. Josephine K. Boyd.
Lanark.....	Dona Ana.....	4,156	13	.....	.....	.....	.....	.....	.....	.....	0.88	+ 0.16	0.68	0	4	24	0	6	w.	Agent Southern Pacific R. R.
Las Vegas.....	San Miguel.....	6,385	25	38.8	- 1.4	74	9	4	27	56	T.	- 0.76	T.	0	0	29	1	0	sw.	N. Mex. Normal Univ.
Liston.....	Chaves.....	5,000	2	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	25	4	1	sw.	H. G. Liston.
Los Lunas (near).....	Valencia.....	4,900	23	39.2	- 2.8	72	10	7	28	48	0.00	- 0.44	0.00	0	0	16	13	1	.....	Richard Pohl.
Magdalena.....	Socorro.....	6,557	7	40.5	.....	70	9	14	27	40	0.30	.....	0.25	5.0	2	26	2	2	w.	William Pender.
Mescalero.....	Otero.....	6,627	1	41.3	.....	67	8	18	27	37	0.05	.....	0.05	0.5	1	22	2	6	sw.	Rev. R. H. Harper.
Mineral Hill.....	San Miguel.....	7,050	7	.....	.....	.....	.....	.....	.....	.....	0.04	.....	0.04	0.5	1	0	27	3	sw.	W. M. Nelson.
Monterey.....	Otero.....	4,436	3	.....	.....	74	8	22	28	.....	T.	.....	T.	0	0	23	5	2	e.	Agent E. P. & S. W. R. R.
Mountainair.....	Torrance.....	6,547	10	40.6	+ 0.4	73	8	6	27	46	0.30	- 0.80	0.30	2.5	1	22	5	3	sw.	Miss Julia Hill.
Mountain Park.....	Otero.....	.....	1	.....	.....	.....	.....	.....	.....	.....	0.08	.....	0.05	1.0	3	19	5	6	.....	Charles E. Beasley.
Newman.....	do.....	3,989	3	.....	.....	.....	.....	.....	.....	.....	1.75	.....	1.40	0	2	25	2	3	nw.	Agent E. P. & S. W. R. R.
Noria.....	Dona Ana.....	4,114	3	.....	.....	.....	.....	.....	.....	.....	0.20	.....	0.20	0	1	25	1	4	w.	Do.
Orogrande.....	Otero.....	4,171	3	.....	.....	77	9	25	28	.....	0.18	.....	0.18	0	1	18	7	5	w.	Do.
Oscuro.....	Lincoln.....	5,016	3	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	.....	.....	.....	.....	Eugene F. Jones.
Otis.....	Eddy.....	3,100	3	.....	.....	.....	.....	.....	.....	.....	1.31									



TABLE 1.—Climatological data for November, 1912. District No. 8—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.					Sky.				Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of overcast days.		Prevailing wind direction.
New Mexico—Contd.																				
Vaughn.	Guadalupe.	5,952	3			70	9				0.16		0.16	2.0	1	23	5	2	sw.	Agent E., P. & S. W. R. R. Dr. I. N. Woodman. Dr. Volney S. Chesney. James F. Matty.
Versylvia.	Taos.	7,500	2	36.6		60	23	9	28	42	0.04		0.04	T.	1	28	2	0	s.	
Willard.	Torrance.	6,080		36.6		72	9	3	27	54	0.10		0.10	1.2	1	27	1	2	sw.	
Winsors.	San Miguel.	8,200	16	34.8	- 0.9	61	9	7	27	42	0.00	- 1.18	0.00	0	0	20	10	0	sw.	
Texas.																				
Abilene.	Taylor.	1,738	27	53.9	+ 1.3	82	7	28	2	39	0.33	- 0.91	0.33	0	2	20	4	6	s.	U. S. Weather Bureau. N. L. Bartholomew. R. M. Boerum. H. B. Cowles. Alvin Japanese Nursery. Lone Star Canal Co. Paul Rudolph. Bryant Link Co. A. Deussen. E. M. Eubank. F. P. Ingerson. E. C. Quereau. John Bender. L. E. Dickey. B. Reagan. R. C. Crist. F. W. Schweppe. T. R. Booth. Craig Anderson. Prof. J. O. Wallis. Mrs. M. A. Stevens. Robt. E. Boyett. Mrs. B. F. Sloan. Claud Strange. G. H. Ritter. U. S. Weather Bureau. Mrs. Pearl Smith. W. H. Denis. J. E. Watts. M. S. Spittler. M. E. Cook. Wm. Lanus. R. M. Jones. J. E. Stevens. H. A. Clapp. Prof. G. S. Fraps. R. M. Webb. R. B. Loggins. Mrs. Sophie Bridge. U. S. Weather Bureau. D. H. Winn. Holland Agricultural Co. A. M. Rencher. H. R. Froese. G. A. Eisenlohr. H. P. Hermansen. U. S. Weather Bureau. M. A. Keller. J. M. B. McKnight. John W. Miller. Jno. O. Shafer. J. C. Edgar. Charles Tarver. James A. Beard. E. L. Faies. U. S. Weather Bureau. Walter Pettit. E. W. Neal. R. L. Bush. W. A. Gardner. Fred W. Laux. F. C. C. Carter. Post Hospital. T. J. Dumble. Post Hospital. H. H. Butz. U. S. Weather Bureau. Arthur Striegler. J. D. Brown. J. L. Hickson. U. S. Weather Bureau. C. W. Cunningham. John Ryan. Prof. R. F. Young. W. B. Campbell. J. M. Johnson. R. L. Gaines. John Gorham. C. W. Johnson. W. A. White. Jas. Kirk. W. J. Crowley. Mrs. L. A. Regan. Dr. J. E. Lay. W. S. Carruthers. Lindsay Waters. Christian Fritz. P. D. Sanders. Henry Edds. J. H. Hancock.
Albany.	Shackelford.	1,429	18	52.0	- 0.7	82	8	19	27	47	0.41	- 1.17	0.41	0	1	27	1	2	n.	
Alice.	Jim Wells.	209	1	63.0		85	12	30	28	38	1.12		0.90	0	3	17	6	7	n.	
Alpine.	Brewster.	4,482	2								2.20		1.20	T.	2	23	0	7	n.	
Alvin.	Brazoria.	49	14	57.0		84	12	27	28	32	0.86	- 3.28	0.83	0	2	11	6	13	n.	
Anahuac.	Chambers.	23	3								0.45		0.23	0	4					
Antelope.	Jack.	1	1								0.18		0.11	0	2	23	6	1		
Aspermont.	Stonewall.	593	56	56.1	- 2.1	78	11	28	28	31	2.73	+ 0.20	1.29	0	5	15	6	9	se.	
Austin.	Travis.	1,637	16	54.8	+ 0.3	84	9	20	28	48	1.75	+ 0.33	1.60	0	3	18	2	10	n.	
Ballinger.	Runnels.	2,573	5								1.70		1.50	0	2	16	1	13	s.	
Barstow.	Ward.	53	2	62.6		86	7	32	28	44	3.17		2.95	0	3	18	4	8	n.	
Bay City.	Matagorda.	29	11	59.8	- 5.1	85	12	29	28	36	1.19	- 2.82	0.94	0	5	21	0	9	n.	
Beaumont.	Jefferson.	225	16	61.9	- 1.2	84	11	30	28	38	1.37	- 0.91	1.33	0	2	13	5	12	n.	
Beeville.	Bee.	2,396	14	52.2	- 1.4	87	8	21	23	48	1.13	- 0.32	0.86	0	4	26	1	3	s.	
Big Springs.	Howard.	1,350	16	55.2	- 1.8	82	11	22	28	44	1.90	- 0.33	1.90	0	2	16	14	0	s.	
Blanco.	Blanco.	1,412	20	56.4	- 0.5	82	8	27	27	50	3.84	+ 1.12	3.75	0	2	4	13	13	n.	
Boerne.	Kendall.	81	11								1.25	- 1.99	0.90	0	4	21	0	9	ne.	
Booth.	Fort Bend.	1,113	17	54.6	- 0.2	79	9	26	28	43	0.14	- 2.34	0.12	0	2	21	1	8	n.	
Bowie.	Montague.	1,500	11	57.8		88	4	28	28	40	0.85	- 0.82	0.85	0	1	17	5	8	s.	
Brady.	McCulloch.	25	23	60.8	- 2.0	83	12	28	28	42	3.68	- 0.14	2.79	0	6	19	9	2	n.	
Brazoria.	Brazoria.	801	3								0.28		0.28	0	1	15	12	3	s.	
Brazos.	Palo Pinto.	350	27	58.5	- 2.5	82	10	31	28	36	1.20	- 2.56	1.20	0	1	11	4	15	n.	
Brenham.	Washington.	754	3								0.10		0.06	0	1	17	7	6	n.	
Bridgeport.	Wise.	12	19	64.6	- 1.8	90	15	34	28	31	1.21	- 1.14	0.91	0	3	26	0	4	e.	
Brighton.	Nueces.	38	48	64.2	- 3.3	85	6	39	3	34	1.40	- 0.80	0.60	0	9				se.	
Brownsville.	Cameron.	1,342	20	52.7	- 0.6	83	6	21	28	50	1.38	- 0.25	1.05	0	2	18	10	2	s.	
Brownwood.	Brown.										2.18		0.70	0	3	26	0	4	n.	
Buena Vista.	Pecos.		4	57.0		84	7	27	27	44	1.97		1.60	0	5	22	4	4	se.	
Cameron.	Milam.	330	4	54.8		82	10	21	28	45	1.16		0.27	0	5	19	3	8	s.	
Carmona.	Polk.			61.3		85	10	31	28	42	1.15		0.60	0	3	18	0	12	n.	
Carrizo Springs.	Dimmit.			49.7	- 3.0	80	7	26	24	39	0.15	- 1.38	0.15	0	1	25	1	4	se.	
Claytonville.	Fisher.	2,100	17								1.12		0.60	0	5	19	6	5	s.	
Clifton.	Bosque.	671	1								1.60		0.67	0	3	10	15	5	n.	
Coleman.	Coleman.	1,710	18	55.9	+ 1.2	88	8	26	28	50	1.60	0.00	0.67	0	3	10	15	5	n.	
Collegeport.	Matagorda.			58.6		80	5	30	3	42	0.92		0.92	0	5	14	4	12	n.	
College Station.	Brazos.	308	22	59.0	+ 0.6	84	8	27	28	40	0.92	- 2.92	0.74	0	5	14	4	12	n.	
Colorado.	Mitchell.	2,066	18	53.6	- 0.2	88		23	2	58	0.00	- 1.47	0.00	0	0					
Columbia.	Brazoria.	34	23								1.60		1.60	0	1	11	2	17	n.	
Columbus.	Colorado.	206	8		- 0.2	82	6	39	28	21	1.58	- 0.83	1.44	0	5	12	11	7	se.	
Corpus Christi.	Nueces.	20	25	63.2	- 2.0	80	11	27	29	38	0.72	- 2.54	0.24	0	5	16	4	10	s.	
Corsicana.	Navarro.	445	23	54.0	- 2.0	80	11	27	29	38	0.72	- 2.54	0.24	0	5	16	4	10	s.	
Cotulla.	La Salle.	425	5								0.27		0.27	0	1					
Crockett.	Houston.	350	8	58.0		83	8	24	28	39	0.79		0.36	0	4	19	6	5	n.	
Cuero.	De Witt.	177	22	58.6	- 3.8	81	12	21	28	44	1.12	- 1.92	1.12	0	1	16	1	13	n.	
Dallas.	Dallas.	466	23	53.5	- 1.1	84	8	21	28	47	1.39	- 1.57	0.78	0	5	16	2	12	s.	
Danewang.	Wharton.	145	16	58.2	- 4.8	85	11	28	28	48	1.90	- 2.00	1.45	0	2	26	2	2	se.	
Del Rio.	Valverde.	952	6	56.3	- 3.1	80	8	29	28	40	1.09	- 0.69	0.76	0	5	16	8	6	se.	
Devine.	Medina.	653	2	61.8		87	9	28	26	45	2.35		1.80	0	3	17	3	10	n.	
Dialville.	Chester.	575	8	57.6		82	12	27	28	38	1.51		0.18	0	4	17	10	3	n.	
Dilley.	Frio.	569	2								1.25		0.75	0	2					
Dublin.	Erath.	1,466	16	55.4	0.0	88	10	24	28	45	0.87	- 0.91	0.66	0	4	17	8	5	w.	
Duval.	Travis.	820	23	58.0	- 2.1	80	8	32	28	31	2.16	- 0.33	1.96	0	2	18	3	9	nw.	
Eagle Pass.	Maverick.	800	35	59.6	- 1.5	85	8	32	21	48	1.19	+ 0.09	0.58	0	5	17	2	4	nw.	
Eastland.	Eastland.	1,420	5								0.60		2.00	0	1	14	10	6	nw.	
Edna.	Jackson.	71	3								2.80		2.00	0	2					
El Paso.	El Paso.	3,762	33	49.3	- 1.6	80	10	26	28	38	0.80	+ 0.21	0.54	0	4	21	6	3	nw.	
Encinal.	La Salle.	558	4	55.9		81	7	33	28	35	0.12		0.12	0	1	17	2	10	n.	
Eola.	Concho.										2.00		2.00	0	1					
Fairland.	Burnet.	1,000	23											0	5	18	7	5	se.	
Falfurrias.	Brooks.		4	62.7		89	12	30	28	46	1.22		0.44	0	5	15	5	10	s.	
Flatonia.	Fayette.	465	4	60.1		84	12	31	28	36	3.48		2.63	0	5	15	5	10	s.	
Flint.	Smith.	483	2	54.9		81	8	18	28	41	0.07		0.07	0	1	17	6	7	s.	
Fort Clark.	Kinney.	1,050	41	56.0	- 3.5	77	8	30	28	38	0.30	- 1.14	0.20	0	2	22	0	8	se.	
Fort Davis.	Jeff Davis.	5,000	33	48.4	- 2.9	73	11	17	14	44	1.68	+ 1.08	1.25	3.5	4	20	6	4	sw.	
Fort McIntosh.	Webb.	5,460	44	63.9	+ 0.5	88	8	33	21	51	0.14	- 0.88	0.14	0	1	16	4	10	n.	
Fort Stockton.	Webb.	3,050	15	54.9	+ 1.7	89	7	29	28	52	1.98	+ 1.26	0.92	0	3	10	17	3	s.	
Fort Worth.	Tarrant.	670	17	55.2	+ 0.1															



TABLE 1.—Climatological data for November, 1912. District No. 8—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelting.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Texas—Continued.																				
Henderson	Rusk	500	3							0.26		0.10	0	3	18	6	6		M. Kangerga.	
Hewitt	McLennan	664	17							1.21	-1.51	0.69	0	4					I. H. Earle.	
Hico	Hamilton		1							0.96		0.70	0	4	19	7	4	n.	John A. Eakins.	
Hillsboro	Hill	628	9							0.43		0.43	0	1					W. G. Escott.	
Hondo	Medina	901	13	56.8		79	11	28	28	40	2.57	+0.84	2.25	0	2	20	3	7	n.	H. E. Haass.
Houston	Harris	138	22	60.6	-0.7	81	12	34	28	29	0.67	-3.22	0.67	0	2	11	13	6	se.	U. S. Weather Bureau.
Huntsville	Walker	400	28	57.2	-2.0	80	18	26	28	36	1.94	-1.86	1.00	0	3	14	0	9	nw.	W. Y. Barr.
Jayton	Kent		2							0.00		0.00	0	0	27	0	3	s.	Wichita Valley Ry. Co.	
Jewett	Leon	496	8	55.0		82	10†	22	28†	44	0.85		0.40	0	3	24	2	4	s.	Earle Adkison.
Junction	Kimble	1,645	11	54.4		82	11	20	28	55	2.25	+0.77	2.25	0	1					Judge John S. Durst.
Kaufman	Kaufman	448	13	55.4	-2.4	79	9	25	28	33	0.26	-2.79	0.15	0	2	20	5	5	s.	B. J. Hubbard.
Kerrville	Kerr	1,650	16	54.4	-3.0	80	8	20	28	44	2.03	-0.95	2.03	0	1	15	7	8	n.	Robert E. Horne.
Killeen	Bell		8	56.8		90	14	30	27	54	2.30		1.15	0	4					J. E. Root, jr.
Knickerbocker	Tom Green	2,050	8	53.6		87	3	22	2	52	3.08		1.88	0	4	25	3	2	s.	Jos. Tweedy.
Kopperl	Bosque	576	15								0.60	-2.25	0.60	0	1	13	7	10	n.	T. A. Johnson.
Lagrange	Fayette	276	2								1.31		1.20	0	3	17	1	12	se.	August Hermes.
Lamesa	Dawson	2,500	2								0.00		0.00	0	0					S. D. Austin.
Lampasas	Lampasas	1,026	20	54.4	-2.0	83	7	23	28	49	1.64	-0.51	1.28	0	3	19	2	9	n.	Mrs. K. I. Webber.
La Parra	Willacy	38	10								1.25	-0.76	0.45	0	4					Jno. G. Kenedy.
Laredo	Webb	427	20								0.29		0.16	0	5	25	0	5	n.	Mrs. A. H. Jackson.
Laureles Ranch	Nueces	20	12								0.92	-1.40	0.92	0	1					Matt Cody.
Liberty	Liberty	38	8	57.9		85	12	23	28	44	1.41		1.02	0	3	19	9	2	n.	Mrs. Fannie Sneed.
Llano	Llano	1,040	21	54.7	-3.1	80	8	26	28	42	1.58	+0.25	1.56	0	2	18	9	3	ne.	E. W. Torrence.
Llano Grande	Hidalgo	86	4	59.4		86	30	28	2	47	1.82		1.40	0	2					M. D. Wardlow.
Long Lake	Anderson	229	7								0.90		0.50	0	4	19	1	10	n.	Geo. W. Ellis.
Longview	Gregg	336	26	53.4	-2.9	79	11	26	29	40	1.26	-2.84	0.68	0	3	22	0	8	ne.	C. A. Propst.
Lubbock	Lubbock		1								0.01		0.01	0	1	27	1	2	sw.	A. L. Paschall.
Lufkin	Angelina	325	5	56.2		83	12	21	28	47	0.43		0.25	0	2	26	0	4	s.	T. A. King.
Luling	Caldwell	418	23	58.8	-1.4	82	11	30	28	35	3.73	+1.31	3.50	0	3	15	3	12	s.	John Carter.
McGregor	McLennan	713	2								1.58		1.10	0	3	24	1	5	s.	W. H. Whitley.
McKinney	Collin	612	10	54.0		81	8	18	28	45	0.23	-2.95	0.18	0	3	20	4	6	nw.	H. Killingsworth.
Marathon	Brewster	4,043	2	49.1		77	7†	24	2	39	2.75		1.24	1.0	3	12	11	6	s.	Rev. A. P. Willis.
Marble Falls	Burnet	771	4								1.90		1.90	0	1	18	0	12	n.	B. E. Cochran.
Marfa	Presidio		4																	W. L. Jones.
Marshall	Harrison	375	11	54.6		81	11†	21	28	42	0.18	-2.90	0.18	0	1	7	14	8	s.	Lee Scott.
Matagorda	Matagorda	12	2								2.07		2.07	0	1	26	3	1	s.	W. E. McNabb.
Mexia	Limestone	537	8	54.4		84	8	24	28	44	0.83		0.34	0	5	10	8	12	s.	Miss Josephine Newman.
Midland	Midland		5	52.4		80	7†	28	2†	50	0.85		0.50	0	2	20	8	2	s.	J. Harvey Clark.
Mission	Hidalgo	140	2	64.6		87	6†	37	3	41	1.54		0.86	0	3	8	16	6	se.	Myron J. Conway.
Mont Belvieu	Chambers	65	2								0.98		0.53	0	5	19	9	2	n.	A. R. Shearer.
Montell	Uvalde		2								0.58		0.25	0	4	15	8	7	s.	A. G. Beecroft.
Mount Blanco	Crosby	2,750	23	48.1	-1.2	79	7†	19	2	43	0.05	-1.31	0.05	0	1	25	3	2	s.	Geo. W. Smith.
Nacogdoches	Nacogdoches	271	13	53.4	-5.0	81	10†	21	28	39	0.80	-3.74	0.29	0	4	21	1	8	n.	Miss Mary Hofmann.
New Braunfels	Comal	720	23	57.8	-1.6	79	11	28	28	38	3.07	+0.88	3.00	0	2	16	4	10	s.	J. Giesecke.
Palestine	Anderson	510	30	56.8	-0.1	79	11	30	28	29	0.57	-3.06	0.26	0	5	16	5	9	ne.	U. S. Weather Bureau.
Panther	Hood	1,000	23								0.57	-1.76	0.25	0	3					E. H. Snider.
Pearsall	Frio	629	2								2.22		1.82	0	2					Ernest De Vilbiss.
Pierce	Wharton	102	6	58.4		84	12	27	28	43	2.40		2.09	0	3	11	0	19	n.	R. B. Pointer.
Plainview	Hale	3,370	16	47.8	-3.5	80	7	20	27	45	0.00	-1.46	0.00	0	0	27	0	3	sw.	J. F. Sander.
Port Lavaca	Calhoun	20	11	60.6	-4.4	84	12	33	28	33	1.88	-1.86	1.88	0	1	14	12	4	n.	J. H. Bickford.
Post	Garza	2,700	2								T.		T.	0	0	22	0	8	s.	W. T. Mann.
Putnam	Callahan	1,591	1								0.30		0.30	0	1	26	1	3	se.	S. M. Davis.
Raymondville	Cameron		1								0.96		0.52	0	5					C. H. Pease.
Ricardo	Nueces	57	3																	P. L. Shaffer.
Rio Grande	Starr	36																		D. N. Garza.
Riverside	Walker	169	8								1.12		0.57	0	3	13	0	17	n.	Mrs. C. W. Higdon.
Rockland	Tyler	136	8								1.50		0.60	0	3	8	9	13	n.	Mack Dunkin.
Rockport	Aransas	12	11	63.4	-0.2	78	10†	36	28	23	0.85	-2.07	0.50	0	3	18	8	4	e.	Mrs. G. Grewe.
Rossville	Atascosa	558	5	59.8		81	8†	28	28	41	1.02		0.79	0	4	15	10	5	se.	W. F. M. Ross.
Runge	Karnes	308	17								1.75	-0.30	1.75	0	1					Reiffert & Froese.
Sabinal	Uvalde	964	8	58.3		79	11†	27	28	34	1.79		0.62	0	4	11	7	12	ne.	Jas. Johnston.
Salado	Bell		2								2.10		1.29	0	3	15	0	15	s.	L. M. Crockett.
San Angelo	Tom Green	1,847	21	53.3	+0.8	80	1	26	15†	42	2.02	+0.71	1.82	0	2	26	1	3	n.	Sam Crowther.
San Antonio	Bexar	701	27	59.7	+0.5	81	8	30	28	33	1.45	-0.33	1.43	0	3	10	7	13	n.	U. S. Weather Bureau.
San Augustine	San Augustine	360	3	55.2		81	11	20	28	45	0.52		0.22	0	5	12	12	6	ne.	F. A. Wilson.
San Juanito	Hidalgo		3								0.88		0.29	0	5	5	0	25	se.	J. B. McAllen.
San Marcos	Hays	588	19	57.2	-3.2	80	8†	27	28	38	3.23	+0.68	3.08	0	2	16	0	14	n.	Miss L. C. Ford.
San Saba	San Saba	1,712	11	53.8	-3.5	81	8	21	28	48	1.84	-0.42	1.44	0	3	20	8	2	n.	Jas. Burns.
Santa Gertrudes	Nueces		12																	J. B. Wright, jr.
Sealy	Austin	201	1								1.17		1.14	0	2	15	3	12	n.	O. H. Albert.
Seymour	Baylor	1,320	6	53.2		88	5	22	26	41	T.		T.	0	0					S. C. Lee.
Snyder	Scurry		1	48.7		80	7	22	28	45	0.00									



[illegible]



TABLE 2.—Daily precipitation for November, 1912. District No. 8—Continued.

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
<i>Texas.</i>																																	
Abilene.....	Brazos.....																					.32	.01				T.					0.33	
Albany.....	do.....					.41															T.											0.41	
Alice [ ].....	Coast.....																	.20					.90								.02	1.12	
Alpine.....	Pecos.....																1.00	1.20				T.										2.20	
Alvin.....	Coast.....						T.						T.								.03		.83				T.					0.86	
Anahuac.....	do.....											.14										.05	.23				.03					0.45	
Antelope.....	Trinity.....					.11																.07										0.18	
Aspermont.....	Brazos.....																													.70	0.70		
Austin.....	Colorado.....					.14																.20	1.29				.02				1.08	2.73	
Ballinger [ ].....	do.....																	.10				1.60				.05						1.75	
Barstow.....	Pecos.....																	1.50						.20								1.70	
Bay City.....	Colorado.....							.20															2.95	.02								3.17	
Beaumont [ ].....	Neches.....	.94						.02															1.33					.09	.07			1.19	
Beeville [ ].....	Coast.....																			T.											.04	1.37	
Big Springs.....	Colorado.....																.11	.11				.86	.05									1.13	
Blanco [ ].....	Guadalupe.....																					* 1.90										1.90	
Boerne [ ].....	San Antonio.....																T.			T.		3.75						T.			.09	3.84	
Booth [ ].....	Brazos.....	.05						.10															.90	.20								1.25	
Bowie.....	Trinity.....					.12																.02					T.					T.	0.14
Brady.....	Colorado.....																						.85									0.85	
Brazoria.....	Brazos.....				T.		.18						.47									.20	2.79				.03		.01			3.68	
Brazos [ ].....	do.....						T.															.28										0.28	
Brenham [ ].....	do.....	T.				T.								T.								1.20	T.				T.	T.			T.	1.20	
Bridgeport [ ].....	Trinity.....					T.		.06															.10	.91							.20	1.21	
Brighton.....	Coast.....																					.60	.01						.32			.08	1.40
Brownsville.....	Rio Grande.....													.10											1.05	.33						1.38	
Brownwood [ ].....	Colorado.....	T.																.82	.70				.66									2.18	
Buena Vista.....	Pecos.....																					T.	1.60							.06	.07	1.97	
Cameron [ ].....	Brazos.....				T.	.09																T.	.25		.32			.15				1.16	
Carmona.....	Neches.....			T.	T.	.27						T.	.22															.10				1.15	
Carrizo Springs.....	Nueces.....																	.60	.40									.15				0.15	
Claytonville.....	Brazos.....																					.15										0.15	
Clifton.....	do.....					.02																.30	.60						.05			.15	1.12
Coleman.....	Colorado.....																					.67	.65								T.	1.60	
Collegeport.....	Coast.....																					.01	.73	T.		.12	T.	.05			.01	.92	
College Station.....	Brazos.....																															0.00	
Colorado.....	Colorado.....																																
Columbia.....	Brazos.....																																
Columbus [ ].....	Colorado.....					T.	T.																1.60					T.				1.60	
Corpus Christi.....	Coast.....																					1.43	.01								.07	1.58	
Corsicana [ ].....	Trinity.....	.24					.10																.22						.13		.03	0.72	
Cotulla.....	Nueces.....																	.27														0.27	
Crockett.....	Trinity.....					T.	.28															T.	.36				.05		.10				0.79
Cuero [ ].....	Guadalupe.....																					1.12										1.12	
Dallas [ ].....	Trinity.....	.78				.03	.43															.09									.06	1.39	
Danevang.....	Coast.....					.45																	1.45									1.90	
Del Rio.....	Rio Grande.....																																
Devine.....	Nueces.....					T.												.25	T.			1.80	.30									2.35	
Dialville.....	do.....				.18																	.17	.10				T.	.06			T.	0.51	
Dilley.....	do.....																						.75									1.25	
Dublin [ ].....	Brazos.....	.14				T.																		.66	.03		T.	.04			T.	0.87	
Duval.....	Colorado.....					T.																1.96	T.				T.				.20	2.16	
Eagle Pass.....	Rio Grande.....					.02												.24	.58	.04									.31			1.19	
Eastland [ ].....	Brazos.....																															T.	1.60
Edna.....	Lavaca.....					.80																2.00										2.80	
El Paso.....	Rio Grande.....																	.45	.10												.01	0.80	
Encinal.....	Nueces.....																		.12													0.12	
Eola.....	Colorado.....																					2.00										2.00	
Fairland.....	do.....																																
Falfurrias.....	Coast.....																	.44	.30	T.			.36	.07							.05	1.22	
Flatonia.....	Guadalupe.....				T.	.01																	.73	2.63						.07	.04	3.48	
Flint.....																																	



TABLE 2.—Daily precipitation for November, 1912. District No. 8—Continued.

Stations.	Watershed.	Day of month.																														Total.			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
Texas—Continued.																																			
Junction	Colorado					.11	.15															2.25										2.25			
Kaufman	Trinity																															T.	0.26		
Kerrville	Guadalupe																					2.03											2.03		
Killeen	Brazos																					1.15	1.05	.05				.05				2.30			
Knickerbocker	Colorado																.33	.31				1.88	.56									3.08			
Kopperl	Brazos																					.60										T.	0.60		
Lagrange	Colorado					T.	T.															.06	1.20					.05					1.31		
Lamesa	do.																																0.00		
Lampasas	Brazos																						1.28					.30	.06				1.64		
La Parra	Coast.													.45				.30	.05	T.		.45										1.25			
Laredo	Rio Grande																	.04	.16		T.							.03	.02	T.	T.	.04	0.29		
Laureles Ranch	Coast.																						.92										0.92		
Liberty	Trinity	24					T.						.15										1.02	.02		T.			T.				1.41		
Llano	Colorado																						1.56										1.58		
Llano Grande	Rio Grande																1.40						.40	.10						.10	T.		1.82		
Long Lake	Trinity		.30																														0.90		
Longview	Sabine	.40					.08																						.18				1.26		
Lubbock	Brazos					.01																											0.01		
Lufkin	Neches																																0.43		
Luling	Guadalupe																						.18					.25	.06				3.73		
McGregor	Brazos																					1.10											20	1.58	
McKinney	Trinity					.03	.02															T.					T.		.28				18	2.23	
Marathon	Rio Grande																1.01	1.24				.50											2.75		
Marble Falls	Colorado																						1.90		T.	T.							1.90		
Marfa	Rio Grande																																0.18		
Marshall	Sabine						T.																						.18				T.	2.07	
Matagorda	Coast.																																T.	0.83	
Mexia	Brazos	.13					.08																.34	.04					.24				T.	0.85	
Midland	Colorado																																1.54		
Mission	Rio Grande																	.50	.86				.35										0.98		
Mont Belvieu	Coast.					.07							.17									.53								.01	.15		T.	0.58	
Montell	Nueces																																T.	0.05	
Mount Blanco	Brazos						T.											.11	.25	.02									T.				T.	0.80	
Nacogdoches	Neches	.26						.29																					.16	T.			T.	.07	3.07
New Braunfels	Guadalupe																						3.00		.10								T.	0.80	
Palestine	Trinity					T.	.17															.03	.23				T.			.13			.01	0.57	
Panther	Brazos																																	0.57	
Pearsall	Nueces																																	2.22	
Pierce	Colorado	.17															.40						1.82											2.40	
Plainview	Brazos																																	0.00	
Port Lavaca	Coast.																																T.	1.88	
Post	Brazos																																T.	0.57	
Putnam	do.																																	0.57	
Raymondville	Coast.																	.52	.02	.23			.30	.04	.15									0.96	
Ricardo	do.																																		
Rio Grande	Rio Grande																																	1.12	
Riverside	Trinity	T.					.57																		.45				T.	.10				1.50	
Rockland	Neches	.40					.60																											1.50	
Rockport	Coast.																																	0.85	
Rossville	Nueces																						.50											1.02	
Runge	San Antonio						T.										.05						.79	.10										1.75	
Sabinal	Nueces																	.62	.06															1.79	
Salado	Brazos																						.62	.49										2.10	
San Angelo	Colorado																																	2.02	
San Antonio	San Antonio						.02											.20						1.82										1.45	
San Augustine	Neches					T.	.15						.02										1.39	.04										0.52	
San Juanito	Coast.	.10																									.22		.10				T.	0.88	
San Marcos	Guadalupe																																	3.23	
San Saba	Colorado																											.07						1.84	
Santa Gertrudes	Coast.																																		
Sealy	Brazos						.03																											1.17	
Seymour	do.																																	T.	0.00
Snyder	Colorado					T.																												1.20	
Somerville	Brazos																																	1.05	
Sonora	Rio Grande																																	0.00	
Spur	Brazos																																	10	0.85
Stamford	do.																																		1.57
Sugarland	do.					.09																												1.82	
Sutherland Springs	San Antonio																																	.43	0.09
Taylor	Brazos						.06																												1.52
Temple	do.																																		3.22
Theodore	Pecos																																		1.52
Thurber	Brazos																																		0.18
Tivoli	Guadalupe																																		2.65
Uvalde	Nueces																																		
Valentine	Rio Grande																																		

\* Precipitation included in that of the next measurement.  
 † Separate dates of falls not recorded.  
 ‡ Precipitation for the 24 hours ending on the morning when it is measured.  
 § Precipitation is less than 0.01 inch rain or melted snow.



TABLE 3.—Maximum and minimum temperatures for November, 1912. District No. 8, Texas and Rio Grande Valley.

Date.	Colorado.				New Mexico.																Texas.								
	Garnett.		San Luis.		Agricultural College.		Carlsbad.		Fort Stanton.		Mountain-air.		Rosedale.		Roswell.		Santa Fe.		Santa Rosa.		Abilene.		Big Springs.		Brownsville.		Corpus Christi.		
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	
1.....	44	8	49	8	67	34	57	31	54	27	62	30	46	25	52	30	42	24	55	22	53	35	56	29	78	49	63	49	
2.....	46	9	49	6	57	29	76	24	57	14	60	25	45	22	59	24	48	26	60	19	62	28	66	22	65	44	61	45	
3.....	50	16	43	16	69	28	72	37	58	18	58	24	54	22	71	28	46	30	63	26	68	43	69	40	73	39	68	52	
4.....	44	11	45	19	73	30	73	39	72	26	60	27	58	26	70	31	49	26	67	38	75	50	74	36	79	56	77	63	
5.....	52	16	50	20	65	33	72	34	60	26	65	24	51	28	67	37	46	32	67	38	80	56	77	50	81	63	75	67	
6.....	55	8	55	11	66	36	83	30	61	27	62	22	57	25	69	32	50	27	68	28	67	43	80	45	85	60	82	66	
7.....	59	10	64	23	72	26	83	49	62	28	70	28	64	32	78	29	58	33	77	43	82	44	82	40	84	56	70	56	
8.....	53	15	63	19	76	33	79	41	78	35	73	30	64	38	75	33	64	35	73	32	77	44	87	39	82	54	75	59	
9.....	64	15	60	19	77	34	84	37	72	24	72	26	66	38	75	34	64	40	80	30	77	55	85	48	81	52	75	64	
10.....	58	14	65	23	79	31	84	36	75	24	72	32	72	50	78	34	61	36	76	30	74	53	79	50	81	54	76	65	
11.....	53	21	48	22	63	54	69	36	61	45	57	37	52	35	75	49	53	34	65	41	78	59	87	57	81	60	78	68	
12.....	61	23	52	22	64	30	69	30	64	37	55	30	50	30	64	36	48	30	77	23	66	45	70	41	85	65	78	69	
13.....	52	8	60	12	64	28	70	36	63	18	56	15	60	28	66	29	53	27	77	23	66	36	67	29	74	58	72	56	
14.....	54	16	61	12	65	26	71	34	65	15	62	35	55	28	67	25	56	27	72	23	75	36	73	28	75	44	69	51	
15.....	53	5	55	15	69	30	70	28	67	18	50	30	58	26	67	23	53	31	67	26	74	43	75	29	78	46	72	51	
16.....	48	14	57	18	47	35	65	40	54	30	55	25	42	30	46	37	48	32	53	39	70	42	64	28	68	53	72	62	
17.....	50	8	54	12	53	40	63	29	43	28	56	22	42	28	48	33	49	25	56	30	56	38	57	38	73	62	67	56	
18.....	54	3	55	8	56	27	69	28	55	14	50	21	52	25	58	26	51	24	65	25	67	32	62	29	66	51	59	53	
19.....	52	1	60	6	57	26	63	29	56	18	49	20	50	28	59	25	52	26	69	27	68	38	64	34	70	52	72	52	
20.....	50	3	57	15	63	25	70	29	58	22	52	20	50	22	61	26	49	22	67	36	68	42	67	41	78	49	68	52	
21.....	50	13	51	20	57	38	59	35	54	28	55	10	44	22	50	28	46	26	55	35	57	46	57	41	70	62	70	64	
22.....	55	4	60	9	59	25	63	30	61	13	53	23	58	22	62	21	52	23	68	21	60	43	59	29	66	57	66	58	
23.....	52	8	55	14	62	23	68	26	74	30	56	26	60	31	64	23	55	31	68	23	66	34	55	21	72	52	72	52	
24.....	48	6	51	10	59	22	64	28	64	28	54	28	52	30	58	25	53	27	53	21	60	30	61	34	78	47	68	53	
25.....	52	3	51	12	62	25	60	29	64	22	51	18	57	25	59	21	49	26	58	16	62	38	60	34	79	52	72	58	
26.....	51	3	48	9	64	25	56	26	62	16	50	16	60	28	53	24	49	24	50	16	56	29	65	31	77	57	64	58	
27.....	42	-2	44	7	49	23	52	32	56	16	50	6	45	15	41	22	38	8	45	11	46	29	60	31	68	53	60	46	
28.....	48	0	51	7	56	19	67	20	60	17	54	18	52	20	60	15	50	19	67	24	57	29	67	27	64	40	59	39	
29.....	48	2	53	8	61	22	64	27	63	17	55	13	56	28	63	21	52	24	60	28	65	43	65	38	73	49	69	51	
30.....	47	3	48	13	58	28	59	31	58	16	62	22	50	25	56	23	47	29	62	17	67	54	65	41	74	53	67	61	
Mns.,	51.5	8.8	53.8	13.8	63.0	29.5	68.1	32.0	61.7	23.4	57.9	23.4	54.1	27.7	62.4	28.1	51.0	27.5	64.2	27.2	66.6	41.2	68.5	36.0	75.3	53.0	69.9	56.5	

Date.	Texas.																				Texas.									
	Del Rio.		El Paso.		Fort McIntosh.		Fort Stockton.		Fort Worth.		Galveston.		Hallettsville.		Houston.		Lufkin.		Palestine.		Plainview.		San Antonio.		Seymour.		Taylor.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1.....			54	32	87	43	55	31	54	37	61	48	61	47	61	47	60	45	58	42	52	28	62	44	53	36	59	42		
2.....			57	32	81	33	67	31	57	29	56	46	57	37	58	38	57	33	54	33	64	22	64	36	60	28	56	34		
3.....			70	38	79	62	81	40	62	37	69	51	70	34	64	39	65	27	62	33	69	29	66	37	68	39	65	37		
4.....			70	40	83	52	82	40	76	50	75	69	78	51	78	59	77	46	74	51	74	34	75	51	74	42	76	52		
5.....			64	47	82	47	77	53	75	57	77	69	76	63	77	64	68	48	72	62	70	44	75	63	88	47	74	62		
6.....			65	40	87	59	75	44	66	50	75	64	76	60	76	60	77	53	68	54	69	31	80	55	67	42	76	52		
7.....			72	34	87	48	89	37	75	39	72	59	76	46	76	51	76	57	73	47	80	35	78	46	80	46	78	43		
8.....			76	39	88	54	82	40	79	48	70	62	78	47	79	53	76	37	78	50	72	37	81	50	73	48	81	50		
9.....			77	43	84	49	86	51	76	53	70	60	75	49	76	49	82	48	76	52	76	39	76	50	78	44	75	51		
10.....			80	44	85	66	89	44	77	54	76	68	80	52	80	61	82	44	78	55	79	40	76	51	78	52	78	50		
11.....			69	51	87	58	85	53	79	62	74	69	82	62	77	61	82	55	79	60	77	50	80	59	80	59	79	60		
12.....			65	37	85	60	77	39	68	51	78	67	69	53	81	65	83	55	76	57	61	40	80	58	78	47	76	55		
13.....			63	35	78	46	70	34	65	44	67	57	70	37	70	53	79	60	65	47	70	32	70	49	69	45	67	46		
14.....			65	33	80	35	76	34	79	40	67	57	74	39	73	48	77	31	73	47	75	30	76	46	76	36	76	39		
15.....			70	39	80	38	78	34	78	47	72	57	75	39	77	51	78	49	76	50	70	26	75	42	76	36	74	43		
16.....			57	38	75	37	65	45	68	43	67	60	73	40	70	48	78	35	68	47	57	35	68	54	66	44	70	46		
17.....			48	37	70	37	55	47	63	43	63	52	69	42	66	46	78	37	65	47	59	29	66	55	56	36	63	50		
18.....			53	35	68	33	63	34	70	36	64	53	70	46	68	47	69	38	67	42	66	27	64	49	70	31	66	47		
19.....			56	34	74	46	66	35	73	43	63	53	69	48	68	49														



## CLIMATOLOGICAL DATA FOR NOVEMBER, 1912.

## DISTRICT No. 9, COLORADO VALLEY.

FREDERICK H. BRANDENBURG, District Editor.

## GENERAL SUMMARY.

The pressure distribution in the Colorado Basin and adjacent region during the month was characteristic of that commonly prevailing during November. Storms were few and not at all severe. They did not linger, for for their progress eastward across the Continental Divide was not impeded, as is often the case later in the season. Moreover, in the wake of these low-pressure areas came rapidly rising pressure until there were built up extensive high-pressure areas that remained practically stagnant for days at a time, giving to the district weather even drier than usual in November, clear skies, bright sunshine, and practically normal temperature in the northern and central parts, while temperatures lower than the normal prevailed in the southern part. In Arizona the cool, dry weather was favorable for the harvesting of citrus fruits, but water for stock had become scarce in some localities at the end of the month.

## TEMPERATURE.

The mean of the 146 stations reporting was 42.6°, or 0.7° lower than the normal. The mean for November, 1911, was 40.4°. The highest monthly mean was 65.6° at Mohawk Summit, Ariz., and the lowest, 18.8°, at Corona, Colo. The first 6 days were cool, the deficiency being marked in western Colorado. From the 7th to the end of the month the daily mean temperatures were somewhat above the normal, except for a day or two here and there. The highest temperatures occurred principally on the 9th, on which date readings of 80° or higher were observed at a number of stations in Arizona. The lowest temperatures occurred generally during the last 4 days. Zero temperature or lower occurred at 1 station in Arizona, 7 in western Colorado, and 5 in western Wyoming. The highest temperature, 90°, occurred at Sacaton, Ariz., on the 9th, and the lowest, -18°, at Fraser, Colo., on the 27th and 28th. On these dates the lowest temperatures at Corona on the top of the pass, 7½ miles distant and 3,100 feet higher, were -6° and zero, respectively.

Details of temperature are summarized in the following table:

Areas of States in district No. 9.	Temperature.					
	Mean.	Departure from normal.	High-est.	Station.	Low-est.	Station.
Western Wyoming.....	27.6	+1.0	65	Green River..	-5	Eden.
Western Colorado.....	32.8	+0.2	73	Delta.....	-18	Fraser.
Eastern Utah.....	37.0	-0.4	72	St. George....	-6	Strawberry Tunnel (east).
Western New Mexico...	40.3	-2.0	82	Rodeo.....	2	Dulce and Luna.
Arizona.....	51.1	-1.0	90	Sacaton.....	-2	Fort Apache.
Southeastern Nevada...	48.5	.....	78	Logan.....	15	Caliente.

## PRECIPITATION.

The average for the 204 stations reporting was 0.28 inch, or 0.65 inch less than the normal, and the least in 4 years. The average for November, 1911, was 0.49 inch. Precipitation, while not widespread or copious in amount, was most general on the 3d-6th, 11th, and 30th. In only one instance was it as much as 1 inch. The greatest monthly amount was 1.66 inches at Gladstone, Colo., and none occurred at 2 stations in western Colorado, 2 in eastern Utah, 6 in western New Mexico, 41 in Arizona, and 1 in southeastern Nevada. Monthly snowfalls of 10 inches or more occurred at 9 stations in Colorado and 1 in Utah. The greatest amount, 23.6 inches, occurred at Gladstone, Colo. At the end of the month the average depth of snow on the ground on the San Juan and Dolores watersheds was 3 inches, average altitude 7,900 feet; on the Gunnison, 3 inches for 8,900 feet; Grand, 6 inches for 8,700 feet; Yampa and White, 4 inches for 8,000 feet.

The average number of days with 0.01 inch or more precipitation was 2 in western Wyoming, 4 in western Colorado, 2 in eastern Utah, and 1 each in western New Mexico, Arizona, and southeastern Nevada. For the district as a whole the average was 2 days.

The average precipitation and departures from the normal on the different watersheds are given in the following table:

## Watersheds.

Green.		Grand.		San Juan.		Little Colorado.		Gila.		Mimbres.		Colorado proper.	
Average.	Departure.	Average.	Departure.	Average.	Departure.	Average.	Departure.	Average.	Departure.	Average.	Departure.	Average.	Departure.
0.47	-0.27	0.65	-0.24	0.52	-0.36	0.07	-0.97	0.12	-0.84	0.04	-0.42	0.16	-0.67

## MISCELLANEOUS.

The average sunshine reported was as follows: Grand Junction, 76, +7 per cent; Durango, 90, +15 per cent; Phoenix, 87, +4 per cent; and Yuma, 90, +2 per cent.

The average relative humidity at Grand Junction was 66; Durango, 61; Phoenix, 46; and Yuma, 42 per cent.



TABLE 1.—Climatological data for November, 1912. District No. 9, Colorado Valley.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.					Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelting.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.			
Wyoming.																					
Big Piney.....	Uinta.....	28.4 <sup>d</sup>	13	27.8	+ 1.0	60 <sup>d</sup>	19 <sup>t</sup>	4 <sup>d</sup>	30	50 <sup>d</sup>	0.50	- 0.05	0.30	5.0	2	25 <sup>d</sup>	17	9	4	nw.	Ira Dodge.
Daniel.....	do.....	6,740	3	26.2		56	9	5	27	41	0.30		0.14	1.2	3	14	10	6	sw.	J. M. Van Dervort.	
Eden.....	Sweetwater.....	6,577	3	30.4		65	9	0	27	44	0.10		0.07	1.2	2	19	10	1	w.	Eden Valley Land & Irrigation Co.	
Green River.....	do.....	7,167	6	25.6 <sup>i</sup>		48 <sup>i</sup>	23	2	27	40 <sup>i</sup>	0.14		0.08	2.0	2	11 <sup>i</sup>	9 <sup>i</sup>	1 <sup>i</sup>	nw.	Geo. H. Maxom.	
Pinedale.....	Fremont.....	9,232	1			50 <sup>t</sup>	9	2	27	40 <sup>t</sup>	0.54		0.52	4.2	2	13 <sup>t</sup>	9 <sup>t</sup>	2 <sup>t</sup>	nw.	U. S. Forest Service.	
Rambler.....	Carbon.....	7,500	3	27.4 <sup>t</sup>															Do.	Do.	
Willow Creek Cabin.....	Fremont.....																				
Colorado.																					
Ashcroft.....	Pitkin.....	9,483	10	27.2	- 1.0	56	9	2	1	44	0.37	- 0.74	0.23	6.5	4					Dan McArthur.	
Breckenridge.....	Summit.....	9,536	23	25.8	- 0.1	52 <sup>b</sup>	9 <sup>t</sup>	7 <sup>b</sup>	27	49 <sup>b</sup>	1.00	- 0.62	0.70	8.4	2	20	3	7	n.	Albert S. McCullough.	
Cascade.....	San Juan.....	8,900	5								1.08		0.77	13.0	3	21	4	5		San Juan W. & P. Co.	
Cedaredge.....	Delta.....	6,175	14	37.6	- 0.7	66	9	13	27	35	0.53	- 0.04	0.35	0	2	21	5	4		Harry A. Cobbett.	
Chromo.....	Archuleta.....	7,500	6								0.58		0.22	4.5	4	11	9	10	w.	Lawrence Nolan.	
Cochetopa.....	Saguache.....	9,088	3								0.58		0.22	4.5	4	11	9	10	w.	Miss Bessie McDonough.	
Colbran.....	Mesa.....	6,000	19	36.8	+ 0.6	64	9	15	27	30	1.05	+ 0.05	0.65	2.0	6	22	3	5	sw.	A. A. Wood.	
Columbine.....	Routt.....	8,766	2								0.54		0.15	10.0	4	14	13	3	sw.	Mrs. M. A. Caron.	
Columbine Ranch.....	Delta.....	6,925	2								1.34		0.98	5.2	3	20	5	5	s.	George W. Wade.	
Corona.....	Grand.....	11,660	5	18.8		38	18	6	27	27									w.	U. S. Weather Bureau.	
Craig.....	Moffat.....	6,600	2	35.0		61	9	11	27	31	0.32		0.09	1.0	4	21	7	2		Joseph F. Haubrich.	
Crawford (near).....	Montrose.....	8,867	2	25.4		55	9	4	1	50	0.85		0.50	8.0	3	18	5	7		C. W. Roe.	
Crested Butte.....	Gunnison.....	4,865	22	36.4	- 0.8	73	9	8	29	46									Charles L. Ross.		
Delta.....	Delta.....	6,534	17	37.6	+ 0.4	64	9	16	28	38	0.40	- 0.74	0.15	0.7	3	19	8	3	nw.	E. M. Getts.	
Durango.....	La Plata.....	10,000	5								0.80		0.60	9.0	2	24	0	6	s.	U. S. Weather Bureau.	
Eureka.....	San Juan.....	8,560	3	19.0		53	9	18	27	58	0.38		0.19	4.0	3	4	10	16	n.	San Juan W. & P. Co.	
Fraser.....	Grand.....	4,510	13	37.2	- 0.2	67	9	12	29	41	1.06	+ 0.45	0.73	4.0	4	21	4	5	sw.	L. D. C. Gaskill.	
Fruita.....	Mesa.....	7,000	1								0.63		0.30	4.0	4	20	8	2	sw.	J. B. Willson.	
Glade Park.....	do.....	10,400	5								1.66		0.92	23.6	7	15	7	8	ne.	A. F. Terrill.	
Gladstone.....	San Juan.....	5,823	14	34.6	+ 0.4	66	10	7	26	44	0.42	- 0.55	0.35	0	3	21	7	8	n.	San Juan W. & P. Co.	
Glenwood Sp'gs (near).....	Garfield.....	4,602	21	39.7	- 1.2	61	9	18	28	32	0.46	- 0.09	0.19	0.4	4	20	6	4	sw.	E. A. O'Neill.	
Grand Junction.....	Mesa.....	8,153	4								0.24		0.24	3.0	1	23	4	3	w.	U. S. Weather Bureau.	
Grand Lake.....	Grand.....	5,089	20	38.3	+ 0.8	68 <sup>a</sup>	9	12 <sup>a</sup>	29	46 <sup>a</sup>	0.79	- 0.11	0.54	1.1	6	15 <sup>a</sup>	6 <sup>a</sup>	8 <sup>a</sup>	sw.	Mrs. Belle Kauffman.	
Gunnison.....	Gunnison.....	7,679	19	27.4	+ 0.1	59	7 <sup>t</sup>	4	28	59	0.06	- 0.57	0.06	1.1	25	4	1	1		David Evans.	
Hesperus (near).....	La Plata.....	7,610	2								0.20		0.15	3.8	2	22	2	6		Clarence Adams.	
Horsely.....	Montrose.....	8,700	2								0.76		0.53	12.0	3	20	7	3	sw.	G. F. Snyder.	
Ironton.....	Ouray.....	10,000	2								1.57		1.20	14.7	3	17	7	6	se.	Lawrence J. Finch.	
Lake City.....	Hinsdale.....	8,686	7	29.4		58	9	5	27	42	0.18		0.18	0.8	1	18	8	4	n.	Mrs. Amanda E. Foley.	
Lay.....	Moffat.....	6,190	18	32.6	+ 1.9	63	9	0	27	45	0.93	+ 0.13	0.48	2.0	3	18	3	9	sw.	J. F. Maurer.	
Mancos.....	Montezuma.....	6,960	13	37.5	+ 0.4	66	9	11	26	43	0.51	- 0.80	0.16	4.5	4	20	5	5	sw.	A. G. Wallman.	
Manitou.....	Gunnison.....	7,951	3	32.0		59	10	4	1	44	0.95		0.52	8.0	7	26	2	2	sw.	B. M. Krumpalitzky.	
Marble.....	Saguache.....	10,846	9								0.59		0.38	6.0	2	19	7	4	ne.	F. E. Morse.	
Marshall Pass.....	Rio Blanca.....	6,182	20	33.3	- 0.5	63	8 <sup>t</sup>	2 <sup>a</sup>	27	44	0.84	- 0.19	0.30	4.0	5	18	6	6		Wm. L. Williams.	
Meeker (near).....	Rio Blanca.....	5,811	23	38.6	+ 2.7	70	9	12	28	41	0.06	- 0.49	0.06	0	1	23	5	2		T. Baker.	
Montrose.....	Montrose.....	7,953	2	28.6		55	9	1	27	42	0.38		0.18	5.5	3	19	7	4	sw.	U. S. Reclamation Service.	
Nast.....	Pitkin.....	7,108	5	32.0		66	9	0	27	52	0.31		0.17	2.4	2	19	6	5	w.	Arthur Hanthorn.	
Pagosa Springs.....	Archuleta.....	4,729	1	40.2		67	9	16	26	35	0.44		0.38	0	2	21	6	3	sw.	E. T. Walker.	
Pallisades.....	Mesa.....	5,694	17	39.4	- 0.4	68	9	13	27	36	1.05	+ 0.25	0.65	0	4	17	10	3	sw.	E. P. Updegraff.	
Paonia.....	Delta.....	9,500	3								0.72		0.60	6.5	3	20	5	5	sw.	J. M. Underwood.	
Pitkin.....	Gunnison.....	1																		Mrs. Maggie Cammann.	
Pyramid.....	Rio Blanca.....	5,050	13								0.67	- 0.67	0.48	10.4	3	16	7	7		E. E. Egly.	
Rangely.....	do.....	8,695	19	36.8		66	9	12	28	38	0.34		0.19	1.0	3	22	2	6		J. H. McGuire.	
Redcliff.....	Eagle.....	8,824	10								0.62		0.28	8.0	5	23	1	6	s.	Dorothea Greiner.	
Redvale.....	Montrose.....	5,437	6	36.7		65	9	11	27	38	0.70		0.59	0.1	3	23	0	7	sw.	Dr. E. S. C. Foster.	
Rico.....	Dolores.....	6,570	6	35.6		69 <sup>b</sup>	9	13 <sup>b</sup>	28	40 <sup>b</sup>	0.35		0.24	0.5	3	20 <sup>b</sup>	3 <sup>b</sup>	5 <sup>b</sup>		Clinton B. Smith.	
River Portal.....	Garfield.....	8,125	9	28.6		55	9	6	28	40	0.71		0.55	5.6	5	18	9	3	w.	Herman Eiche.	
Sapinero (near).....	Gunnison.....	6,110	2	36.2		61	9	13	28	34	0.68		0.45	3.0	5	18	9	3	sw.	U. S. Reclamation Service.	
Shoshone.....	Garfield.....	9,400	5	26.4		54	18	2	1	50 <sup>a</sup>	1.02		0.72	13.0	5	19	7	4	ne.	W. F. Irving.	
Silverton (near).....	San Juan.....	9,600	4								1.50		0.72	19.5	7	5	18	7	s.	Central Colorado Power Co.	
Spruce Lodge.....	Grand.....	6,683	9	30.6		63	9	5	29	50	1.10		0.42	15.1	4	20	3	7		San Juan W. & P. Co.	
Steamboat Springs.....	Routt.....	7,300	5								0.58		0.36	7.0	3	22	4	4		H. J. Willis.	
Tacoma.....	La Plata.....	8,756	1	31.8		60	9	1	1	52	0.76		0.56	9.1	5	23	1	6	e.	Herbert B. Gee.	
Telluride.....	San Miguel.....	8,300	5								0.54		0.44	5.0	2	24	1	5	s.	San Juan W. & P. Co.	
Terminal Dam.....	La Plata.....	8,000	3								0.36		0.32	1.1	2	15	11	4	n.	Wm. T. March.	
Yampa (near).....	Routt.....																			Percy A. Hughes.	
Utah.																					
Aneth.....	San Juan.....	4,800	8	41.7		69	9	15	26	40	0.02		0.02	0	1	25	1	4		H. R. Antes.	
Bluff.....	do.....	4,200																		Mrs. H. P. Rapplee.	
Boneta.....	Wasatch.....	6,750									0.21		0.10	1.5	3	24	0	6	w.	Oscar Wilkins.	
Canaan.....	Washington.....	5,500	13	37.0	- 0.6	58	24	4	30	43	0.30	- 0.67	0.21		2	1	26	4	0	J. M. Lauritzen.	
Castle Dale.....	Emery.....	4,447	13	33.8		62	9	9	27	30	0.41		0.30		1	26	4	0		Miss Fay Jeffs.	
Cisco.....	Grand.....	6,000	1	32.3		58	7	6	27	34	0.31		0.21	2.0	2	20	1	9		J. J. Anderson.	
Dragon.....	Uta.....	5,500	5																		



TABLE 1.—Climatological data for November, 1912. District No. 9—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Utah—Continued.																				
New Harmony.	Washington.	5,200	2								0.50		0.30		2					Geo. F. Prince.
Orderville.	Kane.	6,660	2								0.39		0.14		4					F. A. Porter.
Pine Valley.	Washington.	6,000	1								0.50		0.48	5.8	2	11	14	5	s.	Mason Gardner.
Price.	Carbon.	5,557	1																	R. H. Thompson.
Ranch.	Kane.	6,700	9	38.4		62	7†	16	28	40	0.61		0.42		4	24	2	4	w.	J. W. Seaman.
San Rafael.	Emery.	4,250																		W. C. Foy.
St. George.	Washington.	2,880	25	46.6	- 0.8	72	9	20	28	42	0.21	- 0.30	0.20		2	20	5	5		A. B. Ballantyne.
Scofield.	Carbon.	7,625	2	29.0		55	23	4	1	46	0.35		0.17	5.0	3	24	0	6	s.	B. Newren.
Springdale.	Washington.	3,500	4																	Hattie Wood.
Strawberry Tunnel—east.	Utah.	7,500	4	22.4		55	9	6	1	48	1.32		0.50	12.0	5	18	5	7		U. S. Reclamation Service.
Teasdale.	Wayne.	7,000	2	34.4		63	25	14	27	44	0.22		0.20	2.0	2	20	4	6	w.	Henry Cullum.
Thompsons.	Grand.	5,150	1	39.6		63	9	18	29	30	0.54		0.28	1.0	3	21	6	3	sw.	A. M. Starmont.
Tropic.	Garfield.	7,000	15	39.0†	+ 1.5	66	13	15	28	48	0.02	- 1.01	0.02	0.2	1	17‡	3‡	3‡	nw.	E. P. Bolton.
Troutcreek Ranger.	Uinta.	9,200	1																	Forest supervisor.
Vernal.	do.	5,050	15	33.1	- 1.8	62	9	8	29	39	0.18	- 0.56	0.09	1.0	2	25	3	2		S. P. Trim.
Victor.	Emery.	5,250																		F. F. Noyes.
White Rocks.	Uinta.	6,200									0.18		0.10	1.0	3	22	2	6		C. F. Keil.
Woodside.	Emery.	4,645	1	36.8		60	8†	13	29	37	0.25		0.17	1.0	3	22	1	7	n.	D. P. Adams.
New Mexico.																				
Alma.	Socorro.	5,500	16	42.4	- 3.4	76	7	10	28†	57	0.00	- 1.08	0.00	0	0	19	10	1	s.	Max A. Balke.
Aragon.	do.		5	39.0		71	7	6	24†	57	0.08		0.08	1.0	1	18	11	1	sw.	John R. Milligan.
Aztec.	San Juan.	5,590	12								T.	- 0.43	T.	0	0	21	8	1	sw.	Dr. T. J. West.
Berger's Ranch.	McKinley.	8,000		37.2†		71†	28	12†	22†	58†	0.03		0.03	1.0	1	21	7	2	w.	Herman Berger.
Blackrock.	do.	6,500	3	33.4		59	4	15	21†	36	0.08		0.04	1.6	4	24	0	6	e.	Patrick Des Gorges.
Bloomfield.	San Juan.	5,500	19	38.6	- 0.6	72	10	10	28	47	0.25	- 0.27	0.12	0.4	4	21	6	3	sw.	Fred Le Clerc.
Cambray.	Luna.	4,215	13								0.30	- 0.24	0.30	0	1	19	8	3	w.	Agent So. Pac. R. R.
Cliff.	Grant.	4,470	12	41.8	- 3.2	80	9	5	27	65	0.00	- 0.88	0.00	0	0	20	8	2		W. C. Belden.
Columbus.	Luna.	4,054	3			72	10	22	23†		1.37		0.73	0	3	22	1	7	se.	Agent E. P. & S. W. R. R.
Deming.	do.	4,333	35	44.6		71	9	12	26	50	0.00	- 0.51	0.00	0	0	30	0	0	w.	Agent So. Pac. R. R.
Dulce.	Rio Arriba.	6,756	15	31.9†	- 1.2	64	9	2	28	50	0.90	+ 0.36	0.90	7.0	1	21	8	1	w.	Wm. R. Beyer.
Fort Bayard.	Grant.	6,152	37	44.9	- 1.5	71	9†	22	19†	37	0.01	- 0.64	0.01	0	1	26	1	3	w.	U. S. General Hospital.
Fruitland.	San Juan.	4,800	18	38.2	- 1.0	70	10	12	27	44	T.	- 0.31	T.	0	0	23	6	1	w.	Cyril J. Collyer.
Gage.	Luna.	4,486	12	49.3		75	1†	20	19	49	0.00	- 0.30	0.00	0	0	26	0	4	w.	Agent So. Pac. R. R.
Gila Planting Station.	Grant.	6,475	1	44.4		71	8†	20	28	36	T.		T.	0	0	26	1	3	sw.	U. S. Forest Service.
G. O. S. Ranch.	do.	8,000		36.9		72	10	6	13†	56	T.		T.	0	0	20	8	2	w.	Victor Culbertson.
Hachita.	do.	4,504	3			74	9	19	28		0.08		0.08	0	1	26	0	4	w.	Agent E. P. & S. W. R. R.
Haynes.	Rio Arriba.	6,600	1																	Dr. John R. Haynes.
Hermans.	Luna.	4,451	3								1.31		0.81	0	3	26	0	4	w.	Agent E. P. & S. W. R. R.
Lordsburg.	Grant.	4,245	29	47.6	- 2.8	78	7	19	23†	53	0.18	- 0.31	0.18	0	1	21	7	2	e.	J. H. McClure.
Luna.	Socorro.	7,300	7	35.1		66	11	2	22	51	0.57	- 0.51	0.57	4.5	1	18	12	0	s.	Charles B. Martin.
Mimbres.	Grant.	5,007	7								0.00		0.00	0	0	25	3	2		Charles Dennis.
Pinos Altos (near).	do.	7,253	1					10	22		T.		T.	T.	0	24	6	0	w.	O. L. Scott.
Pratt.	do.	4,415	3								0.28		0.18	0	2	17	8	5	w.	Agent E. P. & S. W. R. R.
Putnam.	San Juan.	6,200		37.6		72	9	9	24†	52	0.00		0.00	0	0	22	0	8	w.	C. F. Spader.
Red Rock.	Grant.	4,150	7								T.		T.	0	0	25	2	3		Robt. H. Woods.
Rodeo.	do.	4,118	3			82	9	22	24†		0.28		0.10	0	4	22	4	4		Agent E. P. & S. W. R. R.
Silver City.	do.	5,860	1	42.2		73	9	16	28	42	T.		T.	0	0	26	1	3	n.	E. M. Brumback.
Arizona.																				
Allaires Ranch.	Cochise.	4,184	16								0.09	- 0.72	0.09	0	1	23	3	4	w.	Thomas Allaire.
Alpine.	Apache.	8,500	2	37.0						50†	0.60		0.60	3.0	1	23	5	2	s.	U. S. Forest Service.
Ashfork.	Yavapai.	5,229	1								T.		T.	0	0	27	2	2		Do.
Aztec.	Yuma.	492	14	62.6	- 0.9	88	11	35	24	45	0.00	- 0.86	0.00	0	0	27	0	3		Agent, So. Pac. Ry.
Benson.	Cochise.	3,523	31	51.6	- 3.6	84	7†	20	52	0.00	- 0.34	0.00	0	0	24	0	6	w.	Do.	
Bisbee.	do.	5,500	20	51.0	- 1.1	76	10	32	28	39	0.22	- 0.45	0.22	0	1	22	2	6		Bisbee High School.
Blue.	Greenlee.	6,000	1								0.00		0.00	0	0	29	0	1	s.	Mrs. Mary A. Jones.
Bonita.	Graham.	4,916	39								T.	- 0.69	T.	0	0	20	8	2		A. H. Jelley.
Bowie.	Cochise.	3,756	35	50.4	- 2.2	83	9†	26	23	46	0.10	- 0.54	0.10	0	1	19	7	4	se.	Agent, So. Pac. Ry.
Buckeye.	Maricopa.	980	18	58.0	- 0.3	88	9	29	27	50	T.	- 0.87	T.	0	0	27	3	0	e.	H. E. Kell.
Canille.	Santa Cruz.	5,225	2								T.		T.	0	0	18	12	0	sw.	Robt. A. Rodgers.
Casa Grande.	Pinal.	1,396	32								0.00	- 0.55	0.00	0	0	30	0	0		Agent, So. Pac. Ry.
Casa Grande Ruins.	do.	1,422	4	58.8		89	9	30	29	40	0.00		0.00	0	0	23	3	4	e.	Frank Pinkley.
Chandler.	Maricopa.	1,217	18	59.4	+ 0.5	85	8	31	25†	47	0.00	- 0.87	0.00	0	0	28	0	2		F. V. N. Dana.
Chin Lee.	Apache.	6,090	3	38.0		72	9	12	28	45	0.26		0.16	0.2	3	12	8	10	n.	Rev. L. Ostermann, O. M. F.
Chlarsons Mill.	Graham.	8,000	7	43.1		64	9†	29	3†	27	0.11		0.10	1.0	2	15	10	5		Hiram R. Chlarsen.
Clifton.	Greenlee.	3,584	22	52.1		76	11	28	18†	36	0.00	- 0.59	0.00	0	0	28	2	0		Arizona & N. Mex. Ry. Co.
Cline.	Gila.	2,300	13	52.4	- 1.9	79	12	27	27	46	0.00	- 1.67	0.00	0	0	20	9	1	sw.	W. M. Clanton.
Cochise.	Cochise.	4,219	14	46.8	- 5.3	82	10	18	25†	53	0.00	- 0.72	0.00	0	0	22	6	2	w.	Agent, So. Pac. Ry.
Columbia.	Yavapai.	1,900	14	61.2	+ 0.5	78	21	45	26	30	0.00	- 1.48	0.00	0	0	28	0	2	s.	M. J. Nolan.
Courtland.	Cochise.	4,543	3								0.12		0.12	0	1	24	5	1		Agent, E. P. & S. W. R. R.
Dos Cabezos.	do.	5,250	4	45.4		75	8	22	12†	40	0.57		0.57	0	1	22	6	2	e.	Neil Erickson.
Douglas.	do.	3,930	9	49.7		79	10	24	23†	45	0.17		0.17	0	1	23	7	0	sw.	F. T. Wright, M. D.
Dudleyville.	Pinal.	2,204	21	53.8	- 1.9	85	9	29	28	44	T.	- 0.97	T.	0	0	18	7	5	sw.	George F. Cook.
Fairbank.	Cochise.	3,862	3																	



TABLE 1.—Climatological data for November, 1912. District No. 9—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of overcast cloudy days.		
Arizona—Continued.																				
Keams Canyon.....	Navajo.....	6,600	7																	Fred E. Bertram.
Kingman.....	Mohave.....	3,326	11	53.2	+ 0.1	78	9	30	29	40	0.00	- 0.78	0.00	0	0	27	0	3	s.	Agent, A. T. & S. F. Ry.
Lakeside.....	Navajo.....	6,500	15	39.0		68	9	13	14	47	0.07	- 1.09	0.07	1.5	1	21	2	7	sw.	Prof. Joseph Peterson.
Lewis Springs.....	Cochise.....	4,029	3								T.		T.	0	0	20	1	9		Agent, E. P. & S. W. R. R.
Lowell Observatory.....	Cocconino.....	7,180	1								0.25		0.20	0	2					Vesto M. Slipher.
McNeal.....	Cochise.....	4,150	2								0.04		0.02	0	2	21	6	3	se.	Miles McNeal.
Maricopa.....	Pinal.....	1,186	37	57.6	- 1.7	88	8	29	25	49	0.00	- 0.61	0.00	0	0	28	2	0	w.	Agent, So. Pac. Ry.
Moccasini.....	Mohave.....	4,500	1	44.5		71	9	19	22	42	0.39		0.16	0	4	25	2	3	s.	R. A. Ward.
Mohawk Summit.....	Yuma.....	538	11	65.6	- 0.9	89	7	40	24	42	0.00	- 0.25	0.00	0	0	23	5	2	w.	Agent, So. Pac. Ry.
Naco.....	Cochise.....	4,579	3																	Agent, E. P. & S. W. R. R.
Natural Bridge.....	Gila.....	4,990	23								0.40	- 1.53	T.	0	1	18	7	5	sw.	D. G. Goodfellow.
Oracle.....	Pinal.....	4,500	20	53.8	- 0.8	79	9	35	21†	37	0.10	- 1.16	0.10	0	1	18	2	10	e.	J. W. Lawson.
Osborn.....	Cochise.....	4,676	3								0.00		0.00	0	0	25	5	0		Agent, E. P. & S. W. R. R.
Paradise.....	do.....	5,436	6	42.2		77	9†	16	28	50	1.02		0.52	0	2	21	6	3	nw.	J. C. Hancock.
Parker.....	Yuma.....	345	16	56.2	- 4.5	89	10	28	1†	57	T.	- 0.58	T.	0	0	25	1	4	sw.	M. A. Israel, M. D.
Payson.....	Gila.....	5,550	4	47.0		80	23	18	28	57	T.		T.	0	0	21	0	9		Mart McDonald.
Phoenix.....	Maricopa.....	1,108	18	59.8	+ 1.1	85	9	39	27	38	0.00	- 0.96	0.00	0	0	22	2	6	e.	U. S. Weather Bureau.
Phoenix (1).....	do.....	1,092	23	57.7	+ 0.6	87	9	32	23†	47	0.00	- 0.81	0.00	0	0	23	6	1	e.	George Aeff.
Phoenix (2).....	do.....	1,189	4	60.1		83	7	36	26	42	T.		T.	0	0	20	0	10	e.	Salt River Valley Nurseries.
Pinal Ranch.....	Pinal.....	4,529	18								0.14	- 2.30	0.14	0	1					Irion & Craig.
Pinto.....	Apache.....	5,660	8								0.00		0.00	0	0	26	2	2	sw.	Mrs. Cella F. Henning.
Prescott.....	Yavapai.....	5,320	46	43.0	- 0.8	73	8	18	13†	46	0.03	- 1.07	0.03	0	1	25	1	4		J. W. Flinn, M. D.
Prescott Dry Farm.....	do.....		1																	L. L. Bates.
Quartzsite.....	Yuma.....	800	4	57.4		85	9	32	28	45	0.00		0.00	0	0	20	9	1	nw.	W. E. Scott.
Redrock.....	Pinal.....	1,804	5								0.01		0.01	0	1					A. B. Lee.
Rice.....	Gila.....	2,605	31	50.6	- 2.0	82	10	21	29	50	0.00	- 0.84	0.00	0	0	21	5	4	e.	Arthur Pritchard.
Roosevelt.....	do.....	2,175	7	56.4		75	9	38	28†	30	0.00		0.00	0	0	21	9	0	w.	U. S. Reclamation Service.
Sacaton.....	Pinal.....	1,280	5	58.6		90	9	31	13†	49	0.00		0.00	0	0					E. W. Hudson.
St. Johns.....	Apache.....	5,650	9	37.8		69	10	8	22	50	0.00		0.00	0	0	19	6	5	sw.	Alex Shreeve.
St. Michaels.....	do.....	6,950	26	37.9	+ 1.9	63	9	12	28	48	T.	- 0.98	T.	0	0	19	7	4	sw.	Rev. A. Weber, O. F. M.
Salome.....	Yuma.....	1,875	5	54.6		82	3	30	27	45	0.00		0.00	0	0	16	11	3		Mrs. M. B. Swartz.
San Simon.....	Cochise.....	3,609	26								0.25	- 0.09	0.25	0	1	20	5	5	sw.	Agent, So. Pac. Ry.
Seligman.....	Yavapai.....	5,219	7	44.4		71	9	19	25†	50	T.		T.	0	0	21	0	9	sw.	Librarian, A. T. & S. F. Ry.
Sentinel.....	Maricopa.....	685	14	60.0	- 2.9	80	1†	40	10†	40	0.00	- 0.42	0.00	0	0	22	2	6	sw.	Agent, So. Pac. Ry.
Silverbell.....	Pima.....	2,650	7																	Imperial Copper Co.
Snowflake.....	Navajo.....	5,644	5	39.9		78	6	10	27	48	T.		T.	0	0	15	3	12	ne.	William J. Flake.
Springerville.....	Apache.....	6,862	2	38.6		70	9	11	27	51	0.00		0.00	0	0	29	1	0	sw.	U. S. Forest Service.
Supai.....	Cocconino.....	3,200	4	51.8		73	9	35	27	32	0.19		0.11	0	2	23	1	6	s.	Laura B. Symons.
Tempe.....	Maricopa.....	1,165	8	56.3		83	9	31	28	42	0.00		0.00	0	0	25	5	0	n.	F. H. Simmons.
Thatcher.....	Graham.....	2,800	10	51.6	- 0.7	84	9	23	26	51	T.	- 0.92	T.	0	0	20	9	1	se.	Prof. J. H. Larson.
Tombstone.....	Cochise.....	4,550	16	53.4	- 1.0	83	9	32	11†	35	0.00	- 0.61	0.00	0	0	26	3	1	e.	F. N. Wolcott.
Truxton.....	Mohave.....	3,997	3	55.8		76	8	42	4†	28	0.03		0.03	0	1	27	0	3	sw.	Truxton Canyon Ind. School.
Tuba.....	Cocconino.....	4,500	14	41.4	- 2.0	63	9	19	28	33	0.01	- 0.68	0.01	T.	1	22	6	2	sw.	Ira E. Bell.
Tucson.....	Pima.....	2,390	32	57.2	- 0.9	88	10	31	12†	49	0.00	- 0.78	0.00	0	0	16	13	1	e.	University of Arizona.
Tucson (1).....	do.....	2,380	4	55.0		88	9	25	12†	53	0.00		0.00	0	0	24	5	1	w.	James F. Record.
Tucson (2).....	do.....	2,526	3	56.6		87	9	30	12†	48	T.		T.	0	0	23	2	5	w.	U. S. Coast and Geod. Sur.
Vail.....	do.....	3,421	14	56.4		89	30	29	23	57	0.00	- 0.82	0.00	0	0	12	18	0	w.	Agent, So. Pac. Ry.
Walnut Grove.....	Yavapai.....	3,649	18								T.	- 1.49	T.	0	0					J. O. Carter.
Wickenburg.....	Maricopa.....	2,072	15					34	7†		0.00	- 0.56	0.00	0	0	27	3	0	nw.	Agent, S. F. & P. P. Ry.
Willcox.....	Cochise.....	4,164	31	50.8	- 1.3	85	24	20	26	53	0.00	- 0.48	0.00	0	0	18	3	9	n.	Agent, So. Pac. Ry.
Williams.....	Cocconino.....	6,750	13	44.6	- 3.1	80	13	20	29	51	0.00	- 1.46	0.00	0	0	20	7	3		E. J. Nordyke.
Winslow.....	Navajo.....	4,853	3																	Winslow High School.
Yuma.....	Yuma.....	141	33	63.2	+ 1.3	86	9	43	25	36	0.00	- 0.32	0.00	0	0	27	1	2	n.	U. S. Weather Bureau.
Yuma (1).....	do.....	150	5	57.8		87	9	31	15†	50	T.		T.	0	0	27	3	0	n.	C. J. Wood.
Nevada.																				
Caliente.....	Lincoln.....	4,407	2	43.1		71	10	15	25†	50	0.00		0.00	0	0	28	1	1	ne.	Salt Lake Route.
Logan.....	Clark.....	1,355	5	53.9		78	9	27	29	44	0.10		0.07	0	2	27	3	0	n.	O. W. Jarvis.

a, b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

\* Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.



TABLE 2.—Daily precipitation for November, 1912. District No. 9, Colorado Valley.

[illegible]



TABLE 2.—Daily precipitation for November, 1912. District No. 9—Continued.

[illegible]



TABLE 2.—Daily precipitation for November, 1912. District No. 9—Continued.

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Arizona—Contd.																																	
Naco.....	San Pedro.....																																
Natural Bridge.....	Verde.....																																
Oracle.....	San Pedro.....																																
Osborn.....	do.....																					T.	10										40
Paradise.....	Desert.....																50						52										
Parker.....	Colorado.....										T.																						T.
Payson.....	Verde.....																																T.
Phoenix.....	Salt.....																																T.
Phoenix (1).....	do.....																																T.
Phoenix (2).....	do.....																																T.
Pinal Ranch II.....	Gila.....																																T.
Pinto.....	Little Colorado.....																																
Prescott.....	Hassayampa.....											.03																					T.
Prescott Dry Farm.....	Verde.....																																
Quartzsite.....	Colorado.....																																
Redrock.....	Santa Cruz.....																																
Rice.....	Gila.....																																
Roosevelt.....	Salt.....																																
Sacaton.....	Gila.....																																
St. Johns.....	Little Colorado.....																																
St. Michaels.....	do.....											T.																					
Salome.....	Colorado.....																																
San Simon.....	Gila.....																																
Seligman.....	Verde.....					T.					T.																						
Sentinel.....	Gila.....																																
Silverbell.....	Santa Cruz.....																																
Snowflake.....	Little Colorado.....																																
Springerville.....	do.....																																
Supai.....	Colorado.....				.11							.08																					
Tempe.....	Salt.....																																
Thatcher.....	Gila.....																																
Tombstone.....	San Pedro.....																																
Truxton.....	Colorado.....						.03																										
Tuba.....	Little Colorado.....					.01																											
Tucson.....	Santa Cruz.....																																
Tucson (1).....	do.....																																
Tucson (2).....	do.....																																
Vail.....	do.....																																
Walnut Grove.....	Hassayampa.....																																
Wickenburg.....	do.....																																
Willcox.....	Desert.....																																
Williams.....	Colorado.....																																
Winslow.....	Little Colorado.....																																
Yuma.....	Colorado.....																																
Yuma (1).....	do.....																																T.
Nevada.																																	
Caliente.....	Colorado.....																																
Logan.....	do.....				.07							.03																					

\* Precipitation included in that of the next measurement.

‡ Separate dates of falls not recorded.

|| Precipitation for the 24 hours ending on the morning when it is measured.

\* Precipitation included in that of the next measurement.  
 † Separate dates of falls not recorded.  
 ‡ Precipitation for the 24 hours ending on the morning when it is measured.  
 T. Precipitation is less than 0.01 inch rain or melted snow.



TABLE 3.—Maximum and minimum temperatures at selected stations for November, 1912. District No. 9, Colorado Valley.

Date.	Wyoming.				Colorado.										Utah.										New Mexico.				
	Daniel.		Green River.		Durango.		Grand Junction.		Gunnison.		Meeker.		Steamboat Springs.		Emery.		Hite.		Moab.		St. George. §§.		Vernal.		Bloom-field.		Fort Bayard.		
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	
1.....	43	16	37	15	46	18	49	26	45	12	42	13	44	10	58	32	58	32	50	26	64	28	44	17	53	23	53	25	
2.....	40	14	43	15	50	24	47	28	42	6	49	13	47	8	56	35	46	35	51	28	67	35	40	18	56	27	52	29	
3.....	37	14	38	22	39	26	43	34	45	21	41	22	36	17	60	32	58	40	54	42	67	43	44	24	52	30	57	30	
4.....	36	20	40	15	42	24	51	33	43	14	46	20	43	27	61	37	54	38	55	32	57	38	47	25	49	27	59	33	
5.....	37	21	42	19	45	28	51	34	48	10	47	20	41	19	60	35	60	37	55	36	62	31	49	24	50	29	57	35	
6.....	33	22	45	20	50	22	54	31	47	8	46	19	40	5	56	20	62	35	58	27	65	30	46	19	.....	.....	60	29	
7.....	41	23	50	25	57	25	58	32	59	21	58	36	51	32	51	16	66	37	62	41	67	30	59	20	56	21	71	34	
8.....	47	20	56	27	58	30	59	35	45	22	63	28	59	24	53	15	68	40	62	32	70	35	57	47	61	25	70	38	
9.....	50	22	65	21	64	30	61	32	49	24	63	24	63	20	61	19	70	36	63	31	72	33	62	25	65	29	71	39	
10.....	53	27	62	24	56	30	57	31	50	26	59	32	59	21	60	18	65	37	53	32	61	37	51	28	72	31	70	40	
11.....	39	27	41	31	47	30	49	37	54	12	52	34	50	31	50	28	61	40	49	39	63	40	52	34	63	32	61	42	
12.....	37	28	44	21	51	24	51	32	45	17	43	18	43	19	51	21	61	34	52	28	62	29	47	20	54	36	60	29	
13.....	41	14	45	17	54	22	54	31	47	7	53	16	50	11	61	20	60	33	52	26	65	27	48	17	55	22	59	28	
14.....	42	14	50	15	58	26	54	27	48	6	52	18	56	13	64	21	60	33	54	25	63	27	49	17	57	20	60	28	
15.....	43	13	42	17	56	24	52	27	49	9	46	17	43	14	52	22	61	34	50	26	64	28	44	19	64	23	64	33	
16.....	45	14	47	15	54	26	57	30	46	7	44	15	51	18	55	20	63	40	57	28	67	32	51	23	57	21	51	35	
17.....	44	12	48	11	52	24	55	30	49	4	48	12	51	12	52	23	60	35	55	25	69	28	48	16	59	19	46	37	
18.....	45	13	49	11	54	22	54	27	59	0	50	13	51	9	51	24	60	33	52	24	65	29	47	15	56	17	53	26	
19.....	42	10	51	12	55	22	49	22	49	-2	53	10	52	8	52	20	59	31	52	22	65	26	45	14	59	13	56	22	
20.....	40	10	37	19	53	20	56	26	40	0	47	17	45	12	51	19	61	30	55	25	64	34	46	21	55	22	56	26	
21.....	42	13	40	6	54	25	53	29	47	7	46	10	41	16	53	15	62	39	57	29	66	28	44	15	53	18	52	34	
22.....	49	8	47	8	52	23	52	27	45	2	47	9	48	8	61	19	60	32	53	23	61	24	46	16	53	15	57	24	
23.....	48	13	51	11	54	21	53	24	51	0	53	9	52	8	60	18	57	30	52	21	61	23	47	14	55	13	62	27	
24.....	40	10	48	13	52	24	51	26	48	6	51	16	50	16	60	17	59	34	54	27	67	25	50	18	53	14	59	27	
25.....	40	17	34	12	53	17	53	22	43	-3	49	9	45	8	63	20	57	27	53	21	63	23	42	14	51	12	66	34	
26.....	37	9	41	14	55	17	48	19	45	-2	.....	.....	35	12	65	15	57	26	52	19	62	23	46	14	53	13	66	30	
27.....	42	-1	39	0	46	16	47	23	42	-1	42	.....	2	40	-2	63	17	55	29	52	20	62	24	38	17	52	14	55	29
28.....	38	4	51	4	52	16	46	18	46	-4	53	10	50	-1	60	15	52	27	49	18	60	20	36	13	56	10	56	22	
29.....	37	0	49	7	54	18	50	18	48	-2	52	8	49	-5	60	14	55	27	49	18	60	21	44	8	58	11	60	28	
30.....	37	-4	33	8	47	20	39	18	41	-3	52	13	44	16	53	11	51	26	49	20	56	27	31	12	54	22	51	32	
Mns.....	41.5	14.1	45.5	15.2	52.0	23.1	51.8	27.6	47.2	7.5	49.9	16.7	47.6	13.5	56.8	21.3	59.3	33.6	53.7	27.0	63.9	29.3	46.7	19.5	56.2	21.0	59.0	30.8	

Date.	Arizona.																				Logan, Nev.	
	Bisbee.		Flagstaff.		Fort Apache. §§		Grand Canyon.		Parker.		Phoenix.		Prescott.		St. Michaels.		Tucson.		Yuma.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.
1.....	54	37	40	27	61	24	35	20	78	28	73	47	54	25	48	25	71	32	78	53	68	37
2.....	59	41	47	32	60	27	38	20	80	29	75	55	57	35	53	23	72	53	72	55	68	45
3.....	61	41	44	27	68	30	39	22	78	29	68	50	54	27	54	24	69	48	73	45	71	54
4.....	61	40	40	27	60	27	42	26	78	29	70	46	50	30	52	26	69	37	74	44	67	40
5.....	58	38	49	22	61	30	46	25	80	29	71	45	53	26	48	30	65	40	77	47	69	34
6.....	64	36	57	20	66	23	46	25	85	28	74	43	65	25	45	20	78	34	79	46	70	37
7.....	75	36	59	24	73	25	44	24	84	32	78	44	69	27	48	24	83	38	84	50	75	39
8.....	75	45	61	30	75	27	42	20	86	34	83	50	73	35	56	30	83	44	83	58	76	43
9.....	73	48	64	26	76	29	44	22	86	35	85	50	72	30	63	26	86	42	86	52	78	37
10.....	76	45	56	27	72	29	44	20	89	35	75	53	64	33	54	24	88	46	71	53	68	43
11.....	70	52	44	22	76	35	46	22	71	35	65	48	52	29	53	23	63	46	73	44	71	44
12.....	63	36	49	18	72	29	40	26	78	31	74	40	58	20	55	25	72	31	75	46	70	33
13.....	64	41	50	17	55	31	38	24	78	31	78	48	64	18	59	20	77	44	81	52	75	33
14.....	65	38	55	17	67	12	40	24	78	31	80	45	62	20	62	28	78	50	80	47	72	31
15.....	68	40	54	18	66	9	42	22	81	45	76	42	60	25	55	26	76	39	80	48	72	34
16.....	63	39	46	34	65	10	40	24	71	39	77	42	58	22	49	20	71	34	79	49	73	34
17.....	49	38	45	32	72	12	44	22	78	37	73	48	57	33	53	22	66	46	77	56	74	45
18.....	53	37	49	22	76	18	44	20	79	35	74	48	60	27	57	21	68	46	77	50	74	44
19.....	59	34	54	16	72	12	54	20	78	35	75	49	63	22	57	20	72	48	78	47	70	36
20.....	58	40	44	23	65	11	43	19	77	37	69	40	50	27	50	18	71	38	75	43	70	40
21.....	52	38	46	32	66	5	51	24	79	30	76	47	58	32	52	17	69	33	79	59	71	43
22.....	54	39	53	21	64	-2	52	20	79	30	76	47	61	19	60	17	70	44	79	49	70	31
23.....	65	35	57	19	70	0	50	12	81	30	77	39	67	21	62	22	80	31	81	45	72	30
24.....	66	35	56	17	62	8	53	21	80	32	75	39	62	23	57	18	80	38	79	45	74	30
25.....	67	40	57	15	70	6	54	24	79	31	75	40	65	21	57	14	78	32	79	43	73	32
26.....	68	39	57	17	68	8	52	19	84	35	75	40	65	24	55	16	75	32	79	43	73	30
27.....	59	39	48	18	70	4	54	24	80	29	77	39	63	20	53	13	74	31	80	47	73	31
28.....	63	32	61	14	66	8	54	16	77	31	74	44	63	18	60	12	79	47	78	46	68	32
29.....	61	40	59	16	64	21	56	20	76	31	74	39	66	22	58	15	80	32	77	45	63	27
30.....	61	44	44	19	70	6	56	20	75	41	67	42	53	25	51	20	70	41	74	49	69	29
Mns.....	62.7	39.4	51.5	22.3	67.6	17.1	46.1*	21.6*	79.5	32.8	74.6	45.0	60.6	25.4	54.5	21.3	74.4	39.9	77.9	48.5	71.2	36.2



## CLIMATOLOGICAL DATA FOR NOVEMBER, 1912.

## DISTRICT NO. 10, GREAT BASIN.

ALFRED H. THIESSEN, District Editor.

## GENERAL SUMMARY.

No unusual meteorological features occurred in the Great Basin during November, 1912, the month being nearly average in all respects. It was favorable for farm work, but owing to the muddy condition of the soil a small acreage of sugar beets in Utah still remained in the ground. Fall plowing was prosecuted vigorously in all dry-farming sections, and in many places fall sowing of grain was done. Range grass was reported in good condition, and stock had not suffered from inclement weather or lack of food or water.

The temperature for November averaged somewhat above normal, being in marked contrast to the two previous fall months, which were colder than normal. This month was also much warmer than November of last year, which, it will be remembered, was one of the coldest on record.

The temperatures throughout the month were unusually uniform, there being no very cold or very warm spells. The cooler portions of the month were from the 1st to the 9th and from the 20th to the 27th. The warmest portion of the month extended from the 7th to the 11th.

Precipitation for the district averaged slightly below normal. The rainfall of October was much above normal; while that of September was about normal. During November the precipitation occurred for the most part during the first half of the month, due to a succession of storms which passed over the Northwest during that period in rapid succession. Other rainy dates were the 19th, 20th, and 30th.

The average number of rainy days was 4, clear days 16, partly cloudy days 7, and cloudy days 7.

## TEMPERATURE.

The mean temperature for the Great Basin was 38.5°, which is 1.1° above normal. There was a very general excess of temperature in the Oregon and Nevada areas; while in the Utah, Idaho, and Wyoming areas, there was less uniformity of the local mean temperatures in reference to the normals. The greatest positive departure was 7.9° at Carson Dam, Nev.; while the greatest negative departure was 2.2° at Thistle, Utah. The local mean temperatures ranged from 49.3° at Jean, Nev., to 29.0° at Cokeville, Wyo.

The following were the highest temperatures that occurred in the various areas of the several States of this district: 60° at Border, Wyo., on the 9th; 63° at Weston, Idaho, on the 9th; 75° at Fillmore, Utah, on the 9th; 66° at Silver Lake, Oreg., on the 13th; 62° at Tahoe, Cal., on the 25th; and 75° at Jean, Nev., on the 1st.

The lowest temperatures were: 2° at Cokeville, Wyo., on the 27th; 15° at Weston, Idaho, on the 29th; 4° at

Meadowville, Utah, on the 1st; 5° at Cliff, Oreg., on the 24th; 10° at Truckee, Cal., on the 21st; and 3° at Tecoma, Nev., on the 23d.

Precipitation averaged only 0.89 inch, which is 0.15 inch below normal. The largest amounts fell in the Utah, Idaho, Wyoming, and Oregon areas; while the lesser amounts occurred in Nevada. While the general average was below normal, there were some exceptions as in the extreme northern portion of the Utah area and in the Idaho area, where most stations reported monthly amounts above normal. The largest local monthly amount, 3.55 inches, fell at Clarkston, Utah. Almost equally large amounts fell at Tahoe, Cal., and Lewers Ranch, Nev., but these were below normal, while that at Clarkston was probably more than double the normal amount at that station.

In the Utah area snow was quite general in all regions, though on the desert districts of the middle and northern portion of this area the snowfall was unimportant. In the mountains of the central and northern counties, snow fell to a depth of 3 feet in the passes.

In the California and Nevada areas light snow fell at the 5,000-foot level, but larger amounts were reported at greater elevations, being about 8 inches at 6,000 feet and as much as 20 inches at 8,000 feet. The heaviest snowfall reported was 27.5 inches at Deer Park, Cal., at an elevation of 6,500 feet. Considerably more snow was reported at high levels during September, October, and November, 1912, than during the same months of either 1910 or 1911.

The average snowfall for stations in the Carson, Humboldt, Truckee, and Walker drainage basins, for the three months, September, October, and November, for the years 1910, 1911, and 1912, are shown in the following table. Three stations were used for the Carson, three for the Humboldt, eight for the Truckee, and three for the Walker Basin. No more stations with complete records are available for the purpose.

Drainage basin.	Average amounts of snowfall, in inches and tenths, for the 3 months, September, October, and November, for the years—		
	1910	1911	1912
Carson.....	0.0	6.2	8.0
Humboldt.....	2.6	8.0	13.1
Truckee.....	11.3	13.0	18.2
Walker.....	5.0	8.7	9.7

This table shows that considerably more snow occurred during September, October, and November, 1912, than during the same months of the two preceding years. It seems to be the generally accepted opinion that there is not



as much run-off from an early snow as from a late one, but in spite of this fact the early heavy snows this season will help out last year's deficiency in these watersheds to a great extent. It will require heavy snow later in the season to bring Lake Tahoe up to the desired level.

#### DAILY RANGES OF TEMPERATURE IN NEVADA.

By HARVEY S. COLE, Section Director.

In the Climatology of the United States, Prof. Henry says that the mean daily range of temperature is greatest in the Plateau region and least along the Pacific and Gulf coasts. Nevada, due to its geographic position, is an extreme type of country having a large range of temperature. It is situated east of a high mountain range and in addition has a considerable elevation. These facts account for the relatively high afternoon temperatures, and at the same time the rare and clear air permit rapid radiation at night with accompanying low temperatures.

The following instances of great ranges in temperature will emphasize this fact. A daily range of temperature of 75° occurred at Carlin August 24, 1910, and 72° on July 6 of the same year was reported at the same place. There is scarcely a season that a daily range of over 60° is not reported at that station. Quinn River Ranch scarcely ever fails to report a range of 55° or more during a season and has reported 60° on several different occasions. Ranges of 50° or more are expected over the eastern and northern portions of the State. The highest temperature ever recorded in the State is 120° at Cobre, in August, 1893; the lowest -39° at Beowawe, January 8, 1890; an absolute range of 159° for the State.

For this study the mean daily ranges for the different months of the year were charted for 20 stations. The stations were not as well distributed as could be desired, as in some portions of the State no record for a number of years is available, but it is thought the ones chosen will answer very well. A chart of the average daily ranges for the year was also prepared.

The mean daily ranges for charts were obtained by subtracting the mean maximum temperature from the mean minimum temperature for each month in the year. The mean maximum and minimum temperatures used were for the different periods obtainable, varying in length, but none for less than five years.

These daily ranges were charted and lines drawn for each 5°. The lines are so irregular that the exposures of the instruments are evidently not uniform; but there is a general increase in range from Tonopah outward, the increase being decided to the northwest and to the northeast, east, southeast, and south, but small to the north and west.

The three Weather Bureau stations, Reno, Winnemucca, and Tonopah, show decidedly lower ranges than surrounding stations, the annual ranges being 28°, 28°, and 19°, respectively. This, of course, is because of the elevation of the instruments above the ground, in free air, where the effects of radiation and insulation are not so great as at the surface.

The record at Austin shows an average daily range for the year of 23°, much less than at surrounding stations, because the location is in a long narrow valley trending

north and south, between high mountain ranges which cut off the amount of sunshine both morning and evening. Its elevation is 6,594 feet, which, other things equal, would give it a larger range.

Records at Lovelocks and Quinn River Ranch show a range of 34° each, considerably larger than the stations in the western portion of the State, which average 28°. The elevation at Lovelocks is 3,977 feet and at Quinn River Ranch it is 4,850 feet, somewhat lower than the other stations in the western portion. This increase in range is due to the great radiation over the Black Rock Desert, the air over the desert being so clear and dry that insolation and radiation are very effective.

The greatest average daily ranges for the year in the State are at Carlin and Geyser, which are 42° and 40°, respectively. Both stations are in the eastern portion of the State. Carlin has an elevation of 5,232 feet and Geyser 6,055 feet. The instruments at both stations are in shelters, over uncultivated ground, in a broad valley, the surface sloping gently to the southward. They are also in a portion of the State where the number of clear days is unusually large, allowing a great amount of insolation and radiation.

The annual variation of the daily range over the State is very noticeable, the average for February at Tonopah being 11° and increasing rapidly in each direction except to the north and west. In the northwestern and eastern portions of the State the midwinter average is 25° to 33°, the latter occurring at Geyser. These ranges increase gradually from midwinter to midsummer, when they exceed 40° in the northwestern portion and in the eastern half of the State. They exceed 44° at several stations in August, and reach 57° at Carlin. The large range at Carlin is due to the shelter being over uncultivated ground, the gentle slope to the south, the elevation leaving the denser portion of the air below, and to its location east of the Sierra, resulting in dry air and cloudless skies.

By the courtesy of Profs. Church and Ferguson I have obtained average daily ranges on Mount Rose for the midsummer and midwinter months, which are 9° and 22°, respectively. The station is on the highest point of the mountain, at an elevation of 10,800 feet. The midwinter range at Lewers Ranch, about 6 miles distant from Mount Rose and at an elevation of 5,200 feet, is 21°, and the midsummer range is 36°. The difference in range is accounted for by the fact that Mount Rose is a sharp peak projecting into the air, and the temperature readings are as near free-air readings as can be obtained except by kite observations.

The range retreats from midsummer to midwinter as consistently as it advanced. It is interesting to notice how consistently the lines of greater range appear on the outer edges of the State, and the lines of least range disappear at Tonopah as the season advances, month by month, from February to August, and how consistently the lines of least range appear at Tonopah and the lines of greatest range disappear on the outer edge from August to February.

The least difference between midsummer and midwinter ranges is 7° at Fernly and 28° at Carlin. This difference between summer and winter ranges is comparatively small in the western and southern portions of the State, while it is large in the northern portions.



TABLE 1.—Climatological data for November, 1912. District No. 10, Great Basin.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Wyoming.																				
Border.....	Uinta.....	6,085	10	30.0	+0.8	60	9	3	27	36	0.07	-0.83	0.04	0.5	2	17	6	7	w.	S. W. Condrion.
Cokeville.....	do.....	6,204	2	29.0		53	8	2	27	38	0.67		0.19	8.0	6	23	1	5	nw.	E. J. Tuckett.
Evanston.....	do.....	6,860	16	32.2	+0.3	59	9	8	1	34	0.74	-0.13	0.21	4.0	6	20	5	5	sw.	Frank Tucker.
Idaho.																				
Geneva.....	Bear Lake.....	6,171	4								1.35		0.71	8.2	5	22	6	2		F. W. Boehme.
Grace.....	Bannock.....	5,400	5																	G. K. Miller.
Paris.....	Bear Lake.....	5,946	17																	John Norton.
Weston.....	Oneida.....	4,460	14	36.6	+0.2	63	9	15	27	34	1.85	+0.45	0.45	0	9	17	5	8	n.	Wm. T. Chatterton.
Utah.																				
Alpine.....	Utah.....	4,900	13								0.96	-0.58	0.30		5	17	6	7		T. F. Carlisle.
Beaver.....	Beaver.....	6,000	8	33.8		66	18	6	30	50	0.57		0.26	T.	3	14	12	4	nw.	M. J. Shelton.
Black Rock.....	Millard.....	4,872	8	38.5		68	9	12	29	46	0.26		0.14		2	17	10	3		W. D. Livingston.
Burrville.....	Sevier.....	6,800	1	35.1		67	9	10	22	43	1.45		0.85		4					F. R. Curtis.
Castle Rock.....	Summit.....	6,244	7								0.98		0.20	7.5	8	14	7	9		David Moore.
Cedar City.....	Iron.....	5,750	7	43.8		66	19	18	21	38	0.73		0.38		3	24	3	3		Parley Dalley.
Center.....	Tooele.....	4,250		35.6		63	18	10	28	38	0.59		0.50	5.0	3	20	2	8	s.	L. C. Peterson.
Clarkston.....	Cache.....	5,930									3.55		0.70		7	12	7	11		W. J. Griffiths.
Corinne.....	Boxelder.....	4,240	42	38.0	+0.6	66	11	17	30	32	1.45	+0.41	1.15	0.5	3	11	8	11		A. C. Murphy.
Deseret.....	Millard.....	4,541	17																	S. W. Western.
Elberta.....	Utah.....	4,650	10	39.2		69	9	18	27	31	0.65		0.26		4	19	3	8	s.	D. C. Walkey.
Enterprise.....	Washington.....	5,750	6																	John Day.
Erekson.....	Tooele.....	4,850									0.75		0.31	6.5	5					N. W. Erekson.
Farmington.....	Davis.....	4,267	11	39.8	-0.8	64	9	20	26	35	1.30	-0.32	0.60	2.0	4	23	3	4	n.	Charles Boylin.
Fillmore.....	Millard.....	5,100	20	41.9	-0.2	75	9	20	21	38	1.40	+0.40	0.63		5					J. J. Starley.
Garland.....	Boxelder.....	4,850	9	36.6		54	17	18	30	28	1.95		0.52	3.0	8	8	15	7	s.	Heber C. Cutler.
Garrison.....	Millard.....	4,850	9	42.3		70	4	12	27	50	0.37		0.27		2					E. M. Smith.
Government Creek.....	Tooele.....	5,277	11	38.6	-0.4	64	9	15	21	38	0.86	-0.29	0.26	4.5	4	14	6	10	s.	Walter James.
Granger.....	Salt Lake.....	4,560		40.8		68	9	23	26	28	1.00		0.50		2					Geo. E. Greene.
Grantsville.....	Tooele.....	4,220	1																	J. C. Woodmansee.
Grouse Creek.....	Boxelder.....	5,148	4								0.80		0.45	1.5	3	14	7	9	sw.	Phillip Paskett.
Heber.....	Wasatch.....	5,593	19	35.9	+0.6	65	9	10	27	40	1.00	-0.36	0.35	5.0	6	18	5	7	s.	John Crook.
Henefer.....	Summit.....	5,301	12	36.0	+0.6	67	9	9	27	46	1.00	-0.70	0.25	1.5	7	18	4	8	nw.	William Brewer.
Hooper.....	Weber.....	4,436	1								0.30		0.20		2					T. M. Jones Jr.
Ibapah (near).....	Tooele.....	7,500	8																	J. S. Lawton.
Ibex.....	Millard.....	5,250	1																	John J. Watson.
Iosepa.....	Tooele.....	4,356	1	39.9		70	10	17	27	36	0.80		0.30		3	12	11	7	n.	Geo. K. Hubbell.
Joy.....	Juab.....	5,000																		A. M. Laird.
Junction.....	Piute.....	6,000									0.45		0.27		2	22	6	2	s.	Joseph Jensen.
Kanosh.....	Millard.....	5,250	2								1.83		0.70		4					Geo. Crane.
Kelton.....	Boxelder.....	4,230	32	33.3	-1.1	55	9	7	27	35	0.57	+0.20	0.40		2	5	19	6	sw.	F. W. Klock.
Lemay.....	do.....	4,221	1	39.4		52	19	26	29	17	0.30		0.30		1	21	5	4		Agent S. P. Co.
Levan.....	Juab.....	5,010	22	36.8	-0.2	65	9	16	1	32	1.44	+0.48	0.75	3.1	6	20	2	8	sw.	William Brown.
Logan.....	Cache.....	4,507	21	37.7	-0.2	65	9	22	26	23	2.40	+1.17	0.64		8					Utah Exp. Station.
Low.....	Tooele.....	4,602		42.0		70	19	22	26	35	0.00		0.00		0	16	9	5		Agent W. P. Ry. Co.
Lucin.....	Boxelder.....	4,504	5																	C. C. Herrington.
Lund.....	Iron.....	5,086	3																	Job F. Hall.
Manti.....	Sanpete.....	5,575	17	38.6	+1.3	69	9	18	26	39	0.94	-0.02	0.31		6	16	2	12		J. M. Anderson.
Maple Creek.....	Utah.....	4,850									1.66		0.81		5	19	2	9		Lewis W. Gillilan.
Marion.....	Summit.....	6,400	7								1.27		0.33	6.0	9	13	9	8	nw.	Jas. Woolstenhulme.
Marysville.....	Piute.....	6,076	12	37.2	0.0	69	11	11	26	54	0.48	-0.44	0.30	0.8	2	13	8	9	n.	John W. Henry.
Meadowville.....	Rich.....	6,200	11	33.2	-0.6	63	9	4	1	29	0.85	-0.45	0.40	1.0	4	19	1	10	w.	J. S. Moffat.
Midlake.....	Boxelder.....	4,235	1	42.4		56	10	33	30	12	T.		T.		0	18	6	6	e.	Agent S. P. Co.
Midvale.....	Salt Lake.....	4,365		40.4		70	9	20	25	31	1.28		0.31		7	14	7	9	s.	M. J. Joy.
Midford.....	Beaver.....	4,962	4																	Agent Salt Lake Route.
Mills.....	Juab.....										0.53		0.29		3					Geo. McCune.
Millville.....	Cache.....	4,848	17								2.85	+1.20	0.48		8	10	17	3	n.	Fred Yeates.
Minersville.....	Beaver.....	5,070	8								0.38		0.12		5	18	9	3	sw.	Geo. Roberts, sr.
Modena.....	Iron.....	5,479	11	38.3	-0.7	64	8	16	22	40	0.29	-0.31	0.28	T.	3	25	2	3	w.	U. S. Weather Bureau.
Morgan.....	Morgan.....	5,068	7	38.1		70	8	13	27	40	1.34		0.56	2.0	6					E. C. Kingston.
Moroni.....	Sanpete.....	5,519	4	38.6		66	9	18	21	33	0.98		0.46	0.5	7	18	4	8		B. F. Eliason.
Mosida.....	Utah.....	4,510																		R. F. Curtis.
Nephi (near).....	Juab.....	5,119	7																	S. Boswell.
Newcastle.....	Iron.....	5,150	1								0.52		0.37		2					T. W. Jones.
Oak City.....	Millard.....	4,900	5																	Peter Nielson.
Ogden.....	Weber.....	4,310	41	39.7	+0.3	67	8	16	30	30	0.91	-0.23	0.26	2.0	6	19	2	9	s.	A. Van DeGraff.
Panguitch.....	Garfield.....	6,560		34.7		64	9	9	23	49	0.22		0.12		2	18	4	47		John N. Henrie.
Park City.....	Summit.....	7,800	7	36.2		69	16	5	22	57	0.17		0.09	1.7	3	8	17	5		Gertrude Evans.
Park Valley.....	Boxelder.....	5,200	1								0.24		0.10	2.5	3	12	11	7	nw.	A. O. Evans.
Parowan.....	Iron.....	5,970	21	40.8	+1.8	68	10	18	30	40	1.12	+0.43	0.50		4					Alex. Matheson.
Payson.....	Utah.....	4,637	8								1.42		0.60		4	18	7	5	ne.	D. L. Coombs.
Pelican Point.....	do.....	4,600	1																	B. M. Mendenhall.
Pine Cliff Ranch.....	Summit.....	8,250	1																	L. E. Leavitt.
Pinto.....	Washington.....	5,907	14	38.7	+2.3	63	10	19	17	36	0.73	-0.59	0.52		3	20	1	6	n.	J. H. Harrison.
Plentiful.....	Tooele.....	4,220									0.51		0.22		3					C. L. Drumm.
Promontory.....	Boxelder.....	4,913	33								0.40		0.40	4.0	1					F. C. Houghton.
Provo.....	Utah.....	4,532	23	38.2	-1.6	72	9	16	26	40	1.18	+0.04	0.88		3&gt					



TABLE 1.—Climatological data for November, 1912. District No. 10, Great Basin—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Oregon.																				
Burns.....	Harney.....	4,157	21	36.3	+ 1.9	60	12	14	30	38	1.66	+ 0.7	0.85	1.2	10	10	13	7	.....	J. C. Welcome, jr.
Cliff.....	Lake.....	4,300	5	36.4	.....	57	12†	5	24†	49	0.96	.....	0.30	0	6	9	6	15	nw.	John C. Green.
Paisley.....	do.....	4,500	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. C. Woodward.
Silver Lake.....	do.....	4,700	15	39.1	+ 2.3	66	13	9	24	48	0.88	- 0.12	0.50	0	4	16	11	3	n.	G. W. Marvin.
California.																				
Tahoe.....	Placer.....	6,240	2	37.0	.....	62	25	15	19	33	3.11	.....	1.00	11.0	5	13	1	16	w.	R. M. Watson.
Truckee.....	Nevada.....	5,819	41	38.8	+ 2.3	58	28	10	21	37	1.20	- 1.16	0.60	8.0	3	12	11	7	se.	Southern Pacific Co.
Nevada.																				
Austin.....	Lander.....	6,594	23	40.9	+ 2.2	64	24	20	1†	30	0.40	- 0.28	0.20	4.0	4	19	1	10	se	F. O. Booe.
Battle Mountain.....	do.....	4,843	41	42.3	+ 3.6	70	1†	10	25†	50	0.06	- 0.50	0.04	0.2	2	20	0	10	.....	Southern Pacific Co.
Beowawe.....	Eureka.....	4,905	41	40.0 <sup>a</sup>	+ 3.1	68 <sup>a</sup>	10	13	29	41 <sup>a</sup>	0.31	- 0.32	0.21	.....	2	6	19	5	.....	Do.
Carlin.....	Elko.....	5,232	41	41.4	+ 7.9	74	19	5	30	58	0.93	+ 0.41	0.35	T.	6	20	5	5	.....	Do.
Carson Dam.....	Churchill.....	4,032	5	40.5†	.....	70†	9	15†	21	47†	0.00	.....	0.00	0	0	.....	.....	.....	w.	U. S. Reclamation Service
Cherry Creek.....	White Pine.....	6,450	4	38.0	.....	61	9	16	21	34	0.40	.....	0.24	3.8	3	13	15	2	w.	J. H. Leishman.
Clover Valley.....	Elko.....	6,000	11	38.4	+ 1.9	61	9	15	1	38	1.74	- 0.08	1.16	0	6	20	3	7	.....	I. F. Wiseman.
Columbia.....	Esmeralda.....	5,750	5	40.6	.....	64	9	21	21	35	0.42	.....	0.38	3.0	2	24	4	2	.....	A. Booth.
Dry Farm.....	Elko.....	5,600	0	39.0	.....	61	10	19	1†	36	1.02	.....	0.46	.....	4	.....	.....	.....	.....	Walfrid Sohlman.
Elko.....	do.....	5,432	41	37.0	+ 3.2	62	9	10	29	43	0.89	+ 0.22	0.65	T.	9	24	0	6	w.	E. J. Clark.
Eureka.....	Eureka.....	6,500	9	38.6	.....	60	9	14	21	37	0.87	.....	0.50	13.5	3	16	6	8	s.	Clay Simms.
Fallon.....	Churchill.....	3,965	7	40.6	.....	72	9	13	21	44	0.08	.....	0.03	0	3	18	6	6	n.	U. S. Experiment Station.
Fernley.....	Lyon.....	4,200	39	40.6	+ 1.1	71	8	10	25	50	0.00	- 0.34	0.00	0	0	18	9	3	.....	Mrs. G. A. Steele.
Gardnerville.....	Douglas.....	4,830	12	40.6	- 2.1	69	8	14	22†	46	0.13	- 1.61	0.07	0	3	.....	.....	.....	s.	Forest Service.
Gerlach.....	Washoe.....	3,931	0	.....	.....	72	25	.....	.....	.....	0.43	.....	0.25	0	2	14	0	16	ne.	Western Pacific Co.
Geyser.....	Lincoln.....	6,055	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mrs. J. F. Wambolt.
Glenbrook.....	Douglas.....	6,240	3	39.7	.....	58	1†	21	13	34	2.30	.....	1.05	5.0	4	21	5	9	sw.	C. C. Henningsen.
Golconda.....	Humboldt.....	4,697	33	40.5	0.0	66	9	14	24†	39	0.39	0.00	0.39	0	1	10	12	8	w.	Southern Pacific Co.
Halleck.....	Elko.....	5,631	19	36.0	+ 3.4	65	9	12	29†	40	T.	- 0.52	T.	0	0	14	6	10	sw.	Do.
Hawthorne.....	Mineral.....	4,569	18	44.4	+ 0.1	72	9	20	27	37	0.13	- 0.19	0.09	0	2	21	7	2	sw.	G. B. Stannard.
Jean.....	Clark.....	2,074	4	49.3	.....	75	1	20	17	47	0.00	.....	0.00	0	0	21	9	0	nw.	Salt Lake Route.
Lahontan.....	Churchill.....	4,200	0	43.1	.....	72	8	17	30	31	0.01	.....	0.01	0	1	16	9	5	w.	U. S. Reclamation Service.
Lewers Ranch.....	Washoe.....	5,500	24	42.7	- 0.9	69	17	18	21	42	3.10	- 0.08	2.10	2.0	4	11	13	6	.....	Ross Lewers.
Lida.....	Esmeralda.....	6,037	0	40.2	.....	67	28	23	1	41	0.35	.....	0.35	2.5	1	27	1	2	se.	L. F. Detwiler.
Lovelocks.....	Humboldt.....	3,977	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. P. Tilford.
McDermitt.....	do.....	4,700	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Scott Sterling.
McGill.....	White Pine.....	6,338	21	35.6	+ 1.5	62	8†	10	1†	47	0.57	- 0.26	0.39	.....	4	21	3	6	s.	R. E. Middagh.
Millett.....	Nye.....	6,002	4	36.1	.....	67	9	6	23	51	0.20	.....	0.20	.....	1	20	5	5	w.	Fred J. Jones.
Mina.....	Mineral.....	4,600	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Southern Pacific Co.
Oasis Ranch.....	Esmeralda.....	5,106	0	.....	.....	.....	.....	13 <sup>d</sup>	23	.....	0.00	.....	0.00	0	0	27	2	1	.....	A. S. Patterson.
Potts.....	Nye.....	6,990	19	34.2	- 0.6	56	8	10	1†	39	0.22	- 0.23	0.12	4.0	2	12	5	13	s.	Miss Mamie Potts.
Quinn River Ranch.....	Humboldt.....	4,850	10	37.0	.....	66	9	9	24	46	0.70	+ 0.19	0.55	0	2	17	2	11	w.	F. M. Payne.
Rebel Creek.....	do.....	0	.....	.....	.....	.....	.....	.....	.....	.....	0.91	.....	0.70	T.	4	14	8	8	sw.	E. J. Hyatt.
Reno.....	Washoe.....	4,532	41	42.4	+ 1.4	65	8	20	25	39	0.10	- 0.99	0.08	T.	3	16	7	7	w.	U. S. Weather Bureau.
Soda Lake.....	Churchill.....	4,534	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	U. S. Reclamation Service.
Tecoma.....	Elko.....	4,812	34	38.3	+ 4.3	69	5	3	23	60	0.54	+ 0.14	0.30	.....	4	14	6	10	.....	Southern Pacific Co.
Tonopah.....	Nye.....	6,090	7	42.5	.....	62	9	23	21	25	0.10	.....	0.10	1.0	1	19	8	3	se.	U. S. Weather Bureau.
Wells.....	Elko.....	5,631	40	36.4	.....	65	6	15	15†	42	0.43	- 0.01	0.36	0	2	24	1	5	.....	Southern Pacific Co.
Winnemucca.....	Humboldt.....	4,432	33	39.6	+ 2.1	66	9	15	24	40	0.92	+ 0.18	0.71	0.3	5	12	6	12	ne.	U. S. Weather Bureau.

\* , b , c , etc. , indicate , respectively , 1 , 2 , 3 , etc. , days missing from the record.

\*\* Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.



Stations.	Watershed.	Day of month.																														Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
<b>Wyoming.</b>																																
Border.....	Bear.....				.03					T.																					.04	0.07
Cokeville.....	do.....			.19	.13		.06		.09												.16										.04	0.67
Evanston.....	do.....				.06		T.				.21	.18				.15					.09										.05	0.74
<b>Idaho.</b>																																
Geneva.....	Bear.....		.27	.71			.11				.14																				.12	1.35
Grace.....	do.....																															
Paris.....	do.....																															
Weston.....	do.....			.10	.17		.35	.07			.45	.41				.10					.15										.05	1.8
<b>Utah.</b>																																
Alpine.....	G. S. Lake.....			.30	.11						.30										.15										.10	0.96
Beaver.....	Sevier Lake.....		T.		.13						.18									T.											.26	0.57
Black Rock.....	do.....				.12	.14																									T.	0.26
Burrville.....	do.....			.34								.25									.01										.85	1.45
Castle Rock.....	G. S. Lake.....		.03		.10	.04	.18				.20	.15				.08					.05										.15	0.98
Cedar City.....	Desert.....											.38									.22										.13	0.73
Center.....	do.....			T.	.07		T.					T.									.02										.50	0.59
Clarkston.....	G. S. Lake.....		.50	.70			.40	.65		.40	.50							.40														3.55
Corinne.....	do.....										1.15										.25										.05	1.45
Deseret.....	Sevier Lake.....																															
Elberta.....	G. S. Lake.....			T.	.08						T.	.26									.20										.11	0.65
Erekson.....	Desert.....			.31	.07							.10									.13										.14	0.75
Enterprise.....	G. S. Lake.....																															
Fairfield.....	do.....																															
Farmington.....	do.....			.30	.66		.20				T.	T.																			.20	1.30
Fillmore.....	Sevier Lake.....				.02	.11					.63										.37										.27	1.40
Garland.....	G. S. Lake.....		.15	.35	.15	.20																										



TABLE 2.—Daily precipitation for November, 1912. District No. 10, Great Basin—Continued.

Stations.	Watershed.	Day of month.																														Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Oregon.																																
Adel.	SE. drainage																															
Ana River	do.		T.	T.		.06	.12			.05			T.		.20					.05											T.	0.48
Bear Valley	do.		.08			.10	.60			.46		.30		.10	.12						.25											1.85
Burns	do.	.05	.07	.18	.03	.85	.04	.03				T.		.11	.09	T.				.21										T.		1.66
Burns Mill	do.																															0.41
Christmas Lake	do.		T.	T.		T.	.23	T.	T.	T.					.15					.03	T.											0.96
Cliff	do.			.15		.15	.21			.09					.30					.06												
Diamond	do.																															2.10
Embodiy	do.			.09	.01	.50	.92	.06		.02	.04	.12	.21	0.2	T.	T.			.03	.01	T.								.07		T.	0.54
Fort Rock	do.					T.	.38	.02		.08										.06												
Paisley	do.											T.	T.		.10																	0.61
Seneca	do.		.06	.09		.10	.16													.03	.07											0.88
Silver Lake	do.			.50															.07													2.94
Valley Falls	do.					1.03	.58		.22	T.	T.								.23					1.10								
California.																																
Bijou	Truckee		T.	.06		T.	.72			.16	.47									.51												1.92
Boca	do						.30			.08										.40												0.78
Bridgeport	East Walker									.14	.40										.15											0.69
Cathedral Park	Truckee																															
Deer Park	do	.40	.60	*	*	*	2.00	*	*	1.00										.75												4.75
Hobart Mills	do	.05	.02	.01	.02	1.30	.04			.12	.27				*	.02				.39	.16											2.40
Lundy	East Walker		T.	.05							.77										.28											4.53
McKinney	Truckee			*	.20	*	3.00				.74				.01					.58												2.12
Markleeville	East Carson		T.				.62				1.40								.10													0.71
Shields Ranch	East Walker		T.	T.	.06		.05			.53										T.	.07											2.08
Silver Creek	East Carson		T.	T.			.35	1.00		.53									.20													3.11
Tahoe	Truckee	T.	T.	T.	.10	.950	1.00	T.		.52					T.					.54												2.40
Tallac	do	T.	T.				.95	.50		T.	.60									.60	.15											1.20
Truckee	do						.40			.20										.64	.26											1.89
Woodfords	West Carson	T.	.04				.14			.81																						
Nevada.																																
Arthur	Humboldt			.10		.30	.70			.30									T.											.20		1.60
Austin	Reese		.05	.05						.20										.10												0.40
Battle Mountain	Humboldt									.04																				.02		0.06
Beowawe	do					.10				.21										T.												0.31
Carlin	do	.20				.35	.05	T.		.13	.10									.10									T.			0.93
Carson Dam	Carson																															0.00
Cherry Creek	Humboldt				.24					.08											T.									.08		0.40
Clover Valley	do		.06		.11	1.16	.16			.17																				.08		1.74
Columbia	Desert				.04					.38											.18											0.42
Dry Farm	Humboldt				.13		.46			.25																						1.02
Elko	do	T.	.06	.01	.01	.65	.03			.06	.02									T.	.04									.01		0.89
Eureka	do			.50						.35											.02											0.87
Fallon	Carson		.02	.03	T.					.03																						0.08
Fernley	Truckee																															0.00
Gardnerville	Carson						.02			.04									.07													0.13
Gerlach	Desert					.18	.25																									0.43
Geyser	Humboldt																															
Glenbrook	Truckee						.75		*	1.05									.50													2.30
Golconda	Humboldt					*	.39																									0.39
Halleck	do											T.																				T.
Hawthorne	Desert				.04						.09																					0.13
Jean	do																															0.00
Lahontan	Carson		T.			T.	T.				.01																					0.01
Lewers Ranch	Truckee					.30	2.10			.50																						3.10
Lida	Desert										.35																					0.35
Lovelocks	Humboldt																															
McDermitt	do									.05		.39																			.08	0.57
McGill	do				.05																											0.81
Metropolis	do	T.	.04	T.		.25	.50			T.										.02												0.65
Mill City	do					.25	.40																									0.20
Millett	Reese				.20					T.										T.												
Mina	Desert																															
North Fork	Humboldt		T.			*	1.50	.05			.20																			*	1.20	2.95
Oasis Ranch	Desert																															0.00
Potts	Reese			.12							.10																					0.22
Quinn River Ranch	Humboldt					.15	.55														T.											0.70
Rebel Creek	do					.15	.70																									0.91
Reno	Truckee						.01			T.	.01								.03													0.10
Skelton	Humboldt				.40		.56				*	.40								*	.20											1.54
Smith	West Walker									.08																						0.08
Soda Lake	Carson																															0.65
Spooners Ranch	Truckee				.10	.30	.05						.20																			T.
Sweetwater	East Walker					T.				T.	.12																					0.54
Tecoma	Humboldt		.05			*	.30				.10																					0.10
Tonopah	Desert								.36																							0.43
Wells	Humboldt																							.07								1.10
Willow Point	Little Hum- boldt.					*	1.10																									
Winnemucca	Humboldt			.10		.21	.50				.01									.10											T.	0.92

\* \* Precipitation included in that of the next measurement.

† Separate dates of falls not recorded.

|| Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.



TABLE 3.—Maximum and minimum temperatures for November, 1912. District No. 10, Great Basin.

Date.	Wyoming.				Weston, Idaho.		Utah.																			
	Border.		Evanston.				Black Rock.		Corinne.		Government Creek.		Marysvale.		Meadow- ville.		Modena.		Ogden.		Parowan.		Provo.		Salt Lake City.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	44	13	42	8	48	18	60	20	45	25	44	16	69	15	30	4	44	19	50	25	45	22	46	20	50	30
2.....	40	15	42	16	51	22	56	22	50	27	40	28	50	27	40	19	49	29	54	35	53	29	54	24	53	37
3.....	40	29	38	26	45	35	54	30	48	37	51	35	44	32	42	30	49	30	42	25	48	32	44	33	51	38
4.....	36	27	34	24	41	32	48	30	45	25	46	32	43	24	40	28	42	29	48	30	43	28	42	30	44	33
5.....	36	14	37	11	46	24	50	30	46	27	48	34	56	22	42	20	47	24	51	39	47	31	47	27	46	31
6.....	45	13	40	24	42	35	56	27	48	38	50	35	64	20	44	19	52	27	61	38	57	26	45	25	51	37
7.....	46	28	48	28	52	35	63	29	55	36	56	36	63	25	52	32	61	28	64	42	57	30	63	30	63	45
8.....	55	31	55	27	59	39	67	28	57	39	59	37	68	28	52	34	64	31	67	50	62	34	67	29	62	41
9.....	60	24	59	25	63	33	68	28	58	30	64	43	69	28	63	34	63	31	57	35	67	34	72	32	70	51
10.....	55	36	52	36	55	42	62	36	60	30	59	42	55	25	55	34	57	33	47	24	68	39	58	40	61	41
11.....	40	32	40	28	48	30	47	33	66	34	52	31	44	30	42	30	47	30	47	24	60	20	55	35	46	35
12.....	44	18	42	16	48	23	50	20	50	25	48	24	49	17	46	25	48	23	52	26	53	23	50	21	52	32
13.....	49	17	52	19	55	23	56	20	48	25	51	34	59	17	44	22	54	20	55	28	60	25	56	23	53	34
14.....	45	16	51	20	53	25	55	20	51	25	51	29	55	23	50	23	55	23	53	29	59	20	58	23	52	37
15.....	42	20	41	22	43	26	58	22	55	28	47	28	56	24	48	23	55	24	53	28	54	29	51	26	49	36
16.....	48	15	42	20	52	23	50	23	50	25	45	22	49	28	45	25	51	29	55	25	59	26	53	23	50	35
17.....	40	13	49	18	49	21	58	20	48	23	51	26	55	15	44	20	52	21	56	27	55	25	55	20	52	35
18.....	41	12	46	19	51	23	59	18	51	25	54	16	55	16	42	20	58	23	55	28	55	25	55	20	51	34
19.....	46	13	50	17	51	22	60	19	49	22	54	31	60	16	46	20	54	24	57	33	61	25	61	22	60	37
20.....	40	25	44	23	47	32	51	29	50	24	50	30	42	29	37	27	44	30	47	21	44	23	52	32	44	31
21.....	36	9	42	10	42	18	47	15	48	23	40	15	43	18	37	20	45	21	47	23	55	22	46	19	45	29
22.....	44	11	46	14	51	20	50	14	46	25	50	22	54	13	47	21	54	16	51	26	60	35	50	19	50	30
23.....	45	9	50	15	45	18	56	13	45	22	49	25	56	12	42	22	56	17	52	23	52	20	50	19	50	30
24.....	43	13	51	15	48	18	51	20	40	26	44	21	53	20	41	22	49	22	48	21	53	23	48	22	46	32
25.....	45	9	43	16	42	17	50	14	43	22	45	22	50	12	40	21	51	17	48	19	53	23	49	18	47	30
26.....	39	8	41	14	48	18	50	13	46	27	42	21	53	11	39	19	51	18	46	20	54	19	46	16	44	29
27.....	37	3	46	20	41	15	52	13	45	25	48	18	51	12	35	12	52	17	49	23	60	22	48	16	47	26
28.....	43	8	48	19	42	20	57	16	47	28	52	16	56	15	47	20	60	22	45	21	57	23	53	19	45	30
29.....	43	5	47	11	50	16	58	12	40	25	53	23	58	11	47	15	58	18	52	29	54	23	55	18	56	30
30.....	32	12	39	17	40	23	46	32	44	17	48	28	45	27	36	20	51	26	39	16	54	18	40	25	48	32
Mns.....	43.3	16.6	45.2	19.3	48.3	24.9	54.8	22.2	49.1	27.0	49.7	27.4	54.1	20.4	43.8	22.7	52.4	24.1	51.6	27.8	55.4	26.2	52.3	24.2	51.3	34.3

Date.	Oregon.						Nevada.																					
	Burns.		Austin.		Cherry Creek.		Elko.		Eureka.		Fallon.		Haw- thorne.		Jean.		Millet.		Quinn River Ranch.		Reno.		Tecoma.		Tonopah.		Winne- mucca.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	50	27	41	20	40	15	48	13	44	20	57	24	58	32	75	36	54	11	47	15	56	29	62	12	46	32	54	28
2.....	43	21	40	22	47	32	47	30	42	29	57	39	56	41	69	34	47	37	53	28	48	34	65	20	44	34	52	34
3.....	38	19	38	23	47	33	50	33	48	27	58	29	63	30	68	40	54	27	54	34	52	32	68	22	50	34	51	35
4.....	46	25	39	24	40	31	46	31	42	23	54	33	54	38	72	40	48	32	49	14	51	33	66	21	48	35	49	29
5.....	42	30	41	29	44	23	46	15	48	18	54	23	58	26	70	38	51	16	40	27	54	32	69	20	50	34	45	28
6.....	54	29	48	28	51	38	50	36	57	34	63	38	61	34	71	37	63	37	52	36	55	47	62	20	52	35	52	37
7.....	46	35	50	29	56	35	54	45	57	30	64	35	66	34	69	32	55	26	52	36	61	40	62	22	53	40	56	37
8.....	55	39	55	36	60	31	61	32	59	35	70	36	70	37	65	32	65	25	63	38	65	40	67	21	58	42	66	37
9.....	59	32	58	34	61	40	62	42	60	40	72	45	72	38	63	34	67	35	66	28	63	40	67	18	62	43	66	39
10.....	48	21	46	30	54	31	60	34	55	28	62	40	60	37	68	37	58	31	52	35	44	35	65	22	51	29	46	28
11.....	46	26	47	30	37	19	43	24	42	20	54	23	54	30	70	36	47	23	49	20	55	25	67	11	41	28	49	23
12.....	60	28	46	32	44	18	50	20	49	18	56	20	60	27	71	35	53	12	57	23	60	24	66	9	50	34	55	26
13.....	50	33	49	33	51	21	53	19	52	23	54	21	60	30	71	35	50	10	51	24	55	26	65	8	53	35	53	26
14.....	50	26	40	34	53	32	55	26	53	32	62	26	60	29	68	38	58	20	56	28	59	34	65	11	50	39	56	31
15.....	44	23	42	30	50	27	52	22	57	25	57	24	60	27	69	29	58	14	57	19	59	26	67	11	50	36	55	28
16.....	46	26	43	28	46	25	51	18	51	20	55	19	63	31	70	28	51	17	54	17	58	26	65	10	49	35	54	29
17.....	48	28	41	29	53	21	56	18	52	27	60	18	60	30	62	20	58	9	53	16	59	27	66	10	52	38	58	23
18.....	55	29	49	23	52	26	58	22	53	30	63	20	67	30	62	35	59	15	58	22	64	29	64	8	54	40	62	25
19.....	46	19	50	20	53	30	58	21	52	32	64	24	62	31	68	32	56	19	56	17	53	33	63	9	51	35	59	20
20.....	44	12	54	30	44	29	49	28	44	20	48	25	57	33	70	30	46	38	49	28	48							



## CLIMATOLOGICAL DATA FOR NOVEMBER, 1912.

## DISTRICT NO. 11, CALIFORNIA.

Prof. ALEXANDER G. McADIE, District Editor.

## GENERAL SUMMARY.

November, 1912, was an exceedingly pleasant month, with temperature nearly normal and rainfall slightly above normal. There was more rain than during November, 1911, or November, 1910. In the northern part of the State, especially in the Coast Range section, rain fell from the 1st to the 14th, mostly in the form of showers, except on the 5th and 6th, when there were continuous and heavy rains. After the 15th there was a succession of pleasant days, except on the 19th and 20th. From the 21st to the 28th the sunshine amounted to nearly 100 per cent of the possible.

There were no extreme temperatures and comparatively few frosts. There was less fog along the coast and less cloudiness than in a normal November, and there were no features of special importance in connection with the pressure distribution. During the first week the weather was unsettled in consequence of a moderate depression over the Great Basin. There were local showers throughout the State and on the 2d a thunderstorm was reported at San Diego. The weather cleared in the southern counties after the 5th, but remained unsettled in the northern counties, due to the presence of extensive lows over the north Pacific. A complete change in pressure distribution occurred about the middle of the month and the surface winds changed from south to north.

The snowfall in the mountains was light. At the middle of the month there was a depth of 5 inches on the ground, which gradually melted, and at the close of the month snow remained only in patches.

One feature of the month was the number of red sunsets reported at many stations. The usual yellow colors occurring shortly after sunset, about 5 p. m., would change to deep red 20 or 25 minutes after sunset. The red color did not extend to any great height above the horizon.

## TEMPERATURE.

The mean temperature of the State was nearly 1° below the normal. The following table gives the means and departures for each November from 1897 to 1912, inclusive:

Year.	Mean.	Departure.	Year.	Mean.	Departure.
	°F.	°F.		°F.	°F.
1897.....	50.8	-2.1	1905.....	52.8	-0.1
1898.....	51.6	-1.3	1906.....	52.6	-0.3
1899.....	52.1	-0.8	1907.....	52.7	-0.2
1900.....	54.7	+1.8	1908.....	52.9	0.0
1901.....	54.9	+2.0	1909.....	50.7	-2.2
1902.....	50.8	-2.1	1910.....	52.8	-0.1
1903.....	55.2	+2.3	1911.....	51.1	-1.8
1904.....	53.4	+0.5	1912.....	52.2	-0.7

The highest temperature recorded at any station was 93° at Rialto (near), on the 8th. This was 4° lower than the highest temperature recorded during November, 1911, and 10° lower than the highest temperature recorded during November, 1910. The lowest temperature during the month was 3°, which occurred at Tamarack on the 13th. This was 11° higher than the lowest temperature recorded during the preceding November. The highest monthly mean was 69.2° at Chino and the lowest monthly mean was 25.6° at Tamarack.

## PRECIPITATION.

The precipitation was slightly above the normal. November is a variable month in the matter of precipitation, some months having all the characteristics of the winter type and others resembling summer months and being consequently dry. The present month was one of the wet type until the 15th, when there was a change, and the remainder of the month was as dry by comparison as the first half was wet. The rainfall was not well distributed geographically, the southern counties receiving comparatively little rain.

The following table gives the average precipitation and departure from the normal for each November from 1897 to 1912, inclusive:

Year.	Mean.	Departure.	Year.	Mean.	Departure.
	Inches.	Inches.		Inches.	Inches.
1897.....	1.41	-1.40	1905.....	2.26	-0.55
1898.....	.99	-1.82	1906.....	1.92	-.89
1899.....	3.82	+1.01	1907.....	.28	-2.53
1900.....	5.21	+2.40	1908.....	1.85	-.96
1901.....	2.65	-.16	1909.....	4.52	+1.71
1902.....	3.61	+.80	1910.....	1.91	-.90
1903.....	5.03	+2.22	1911.....	1.00	-1.81
1904.....	1.44	-1.37	1912.....	2.85	+.04

The greatest monthly rainfall was 21.17 inches at Branscomb, which was much greater than the heaviest rainfall reported at any point in California during November, 1911. There was no rainfall at 15 stations. Last year 26 stations reported no rainfall. The heaviest 24-hour rainfall was 6.60 inches at Branscomb on the 5th.

*Snowfall.*—There were 45 inches of snow at Tamarack during the month, or nearly 9 inches more than during November, 1911. At Fordyce Dam, 30 inches fell, or 4 inches more than in the preceding November; at La Porte the fall was 29.3 inches and at Summit, Placer County, 19 inches. Most of the snow melted during the last decade and at the close of the month the snow cover had practically disappeared below 7,000 feet.



## SUNSHINE.

The following table gives the total hours of sunshine and percentage of the possible:

Stations.	Hours.	Percent- age of possible.	Stations.	Hours.	Percent- age of possible.
Eureka.....	46	15	Sacramento.....	170	56
Fresno.....	238	78	San Diego.....	244	78
Los Angeles.....	246	79	San Francisco.....	171	56
Mount Tamalpais.....	192	63	San Jose.....	212	69
Red Bluff.....	152	51	San Luis Obispo.....	224	72

NOTES ON THE RIVERS OF THE SACRAMENTO AND LOWER SAN JOAQUIN WATERSHEDS DURING THE MONTH OF NOVEMBER, 1912.

By N. R. TAYLOR, Local Forecaster.

*Sacramento watershed.*—The rivers of this watershed averaged from 1 foot to over 3 feet higher than during the preceding month. In the upper reaches of the Sacramento the river was slightly above the November normal stage. At all other points in this stream there was little departure from the usual November stages.

Rains were general during the first decade of the month in the Sacramento River Basin and were relatively heavy from the headwaters of this stream southward to Red Bluff. As a result of the rains there was a substantial rise at all places on the Sacramento River, the greatest being 8.7 feet at Colusa during the 24 hours ending on the 8th, when the river at that point culminated in a stage of 14.5 feet. The crest of this rise reached Knights Landing and Sacramento City on the 9th. After the 10th of the month there was a steady fall in the Sacramento, and by the close of the month the river was only slightly above the low stages that obtained prior to the rains.

Rains were also general in the Feather-Yuba and American watersheds, resulting in sharp rises in those streams, but, like the Sacramento, they receded steadily after the 10th of the month, and at its close the effects of the rainfall were barely apparent.

Some snow fell in the high ranges of the Sierra Nevada during the month, but it resulted in no appreciable rise.

Navigation during the month was uninterrupted.

*Lower San Joaquin watershed.*—Some rain fell in this watershed during the month, but not in sufficient amounts to materially affect the average stages, which were slightly above those of October.

NOTES ON THE STREAMS OF THE UPPER SAN JOAQUIN WATERSHED.

By W. E. BONNETT, Local Forecaster.

November stages at all stations in this river district continued very low during November and not materially different from the low stages of October. The Merced was slightly higher and the San Joaquin slightly lower than in October, but the changes were not considerable. One general rain in moderate amount fell in these watersheds on the 10th. It was followed by a small rise in the Merced, but no change occurred in other streams of the district.

RELATION OF RAINFALL TO YIELD OF MILK.

By A. G. MCADIE.

In Bulletin No. 233, of the College of Agriculture, University of California, there is given the results of three years' work by the Ferndale (Humboldt County, Cal.) Cow-Testing Association. The Bulletin is written by Prof. Leroy Anderson, in charge of Dairy Industry, and contains much that is interesting regarding the regular and economic testing of cows for the production of milk and butter fat. In California there are three cow-testing associations in active operation—at Ferndale, Modesto, and Tulare. The method of testing consists in sampling and weighing the milk of each cow at the evening and morning milking and testing the combined sample for butter fat. The amount of milk and fat produced in the 24 hours multiplied by the number of days in the month is taken as the cow's monthly production. No record, however, is kept of the cow's feed.

The Eel River lands, occupied by the Ferndale association, represent the most highly specialized dairy interests of the State. The rains are heavy in the winter season, and it is the custom to have most of the cows dry at that time. It is found that the annual rainfall has important bearing in interpreting the records. The precipitation of 1909 was 5.75 inches above normal; while that of 1910 and 1911 was 16.24 inches and 16.04 inches, respectively, below normal. In spite of the great decrease in rainfall during the last two years and its resultant effect upon grazing and feed conditions in general, the average production of milk and fat increased.

It would be most interesting to compare the relative yields of milk and butter fat in different sections of the State in connection with rainfall departures from normal conditions.



TABLE 1.—Climatological data for November, 1912. District No. 11, California.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of overcast days.
Oregon.																				
Klamath Agency.....	Klamath.....	4,169	4	38.1	.....	68	1	12	29	42	4.95	.....	1.20	1.5	8	11	9	10	s.	N. D. Ginsbach.
Klamath Falls.....	do.....	4,100	23	39.1	- 0.1	60	16	20	29	29	2.51	+ 1.02	1.04	0.5	11	9	10	11	nw.	Augusta J. Hayden.
Lakeview.....	Lake.....	4,825	29	39.2 <sup>b</sup>	+ 1.3	60 <sup>b</sup>	25	19	20	35	1.62	- 0.28	0.92	1.9	8	8	6	16	s.	C. C. Gott.
Merrill.....	Klamath.....	4,070	6	41.0	.....	70	17 <sup>c</sup>	16	29	54	1.97	.....	0.75	0	5	12	8	10	sw.	Mrs. W. L. Hensel.
Yonah.....	do.....	4,146	5	38.7	.....	59	26	10	28	42	2.56	.....	0.83	1.0	7	4	15	11	sw.	Jacob Rueck.
California.																				
Alameda.....	Alameda.....	19	2	.....	.....	65	16	14	24	48	0.59	.....	0.18	0	6	13	9	8	s.	Chas. E. Sears.
Alturas.....	Modoc.....	4,460	8	41.1	.....	87	13	40	15	47	0.48	- 0.90	0.23	0	3	21	0	9	.....	Prof. C. B. Towle.
Angiola.....	Tulare.....	208	12	.....	.....	87	13	40	15	47	0.48	- 0.90	0.23	0	3	21	0	9	.....	Santa Fe Co.
Antioch **.....	Contra Costa.....	46	33	63.6	+ 9.8	72	16	33	22	40	1.51	- 1.47	0.33	0	6	13	1	16	nw.	Southern Pacific Co.
Aptos **.....	Santa Cruz.....	102	27	53.6	+ 0.6	72	16	33	22	40	1.51	- 1.47	0.33	0	6	13	1	16	nw.	Do.
Arrowhead Springs.....	San Bernardino.....	2,000	3	62.4	.....	83	9	41	3	30	1.36	.....	0.98	0	4	27	0	3	.....	Dr. E. A. Crockat.
Auburn.....	Placer.....	1,360	41	45.6	- 9.4	70	27	32	30	24	2.53	- 1.39	0.80	0	7	16	4	10	no.	Southern Pacific Co.
Avalon.....	Los Angeles.....	30	2	61.4	.....	79	16 <sup>d</sup>	46	26	23	0.20	.....	0.09	0	4	24	5	1	w.	T. S. Manning.
Azusa.....	do.....	540	10	62.6	+ 3.6	89	7	40	11	45	0.53	- 1.03	0.36	0	4	25	2	3	.....	A. P. Griffith.
Bagdad.....	San Bernardino.....	784	9	63.8	.....	85	3	38	23	36	0.00	.....	0.00	0	0	.....	.....	.....	.....	Santa Fe Co.
Bakersfield.....	Kern.....	404	23	57.4	+ 1.8	86	8	32	21	48	0.00	- 0.46	0.00	0	0	.....	.....	.....	.....	Do.
Barstow.....	San Bernardino.....	2,105	9	57.6	.....	81	1	32	22	42	0.21	- 0.09	0.16	0	2	20	8	2	w.	E. L. White.
Berkeley.....	Alameda.....	317	25	55.6	+ 0.4	71	26	42	30	26	3.89	+ 1.34	2.39	0	10	15	6	9	s.	State University.
Biggs **.....	Butte.....	98	13	55.6	+ 1.5	80	21 <sup>e</sup>	28	29	54	1.97	- 0.28	0.75	0	8	21	4	5	s.	Southern Pacific Co.
Bishop.....	Inyo.....	4,450	17	43.4	- 2.8	73	27	16	20	45	0.00	- 0.43	0.00	0	0	.....	.....	.....	.....	Paul E. Lodge.
Bishop Creek.....	do.....	8,500	2	35.8	.....	56	27	17	3	26	0.20	.....	0.20	2.0	1	29	0	1	.....	Do.
Blocksburg.....	Humboldt.....	1,700	6	49.0	.....	68	18	32	22	35	12.20	.....	3.44	0	17	5	9	16	s.	Victor Hope.
Blue Canon.....	Placer.....	4,695	13	46.7	+ 2.2	68	28	25	15	37	8.88	+ 0.13	4.10	3.0	5	13	4	13	n.	Southern Pacific Co.
Blythe.....	Riverside.....	268	3	56.5	.....	86	9	24	26	55	0.00	.....	0.00	0	0	23	2	5	n.	D. H. Carey.
Branscomb.....	Mendocino.....	2,000	12	50.8	.....	73	24	33	21	39	21.17	+ 7.12	6.60	0	15	14	2	14	sw.	A. J. Hann.
Brawley.....	Imperial.....	-105	3	61.8 <sup>d</sup>	.....	86	9 <sup>f</sup>	35	23	47	0.00	.....	0.15	0	3	26	1	3	sw.	M. D. Witter.
Burney.....	Shasta.....	3,300	2	41.4	.....	64	16	18	29	42	2.78	.....	0.93	0	10	11	6	13	sw.	Mrs. M. D. Chambers.
Cahuilla.....	Riverside.....	3,600	1	51.4	.....	77	10	28	20	45	0.40	.....	0.15	0	3	26	1	3	sw.	Carl Stevens.
Calxico.....	Imperial.....	0	7	61.5	.....	83	9	40	25	36	0.00	.....	0.00	0	0	30	0	0	nw.	J. E. Peck.
Caliente **.....	Kern.....	1,290	36	51.0	- 4.2	68	5	40	23	.....	0.00	- 0.76	0.00	0	0	15	4	11	e.	Southern Pacific Co.
Calistoga.....	Napa.....	363	40	53.0	- 0.4	80	7 <sup>g</sup>	30	26	47	5.68	+ 1.83	2.21	0	9	12	0	18	w.	Do.
Campbell.....	Santa Clara.....	217	15	51.8	- 0.9	76	18	29	22	43	0.34	- 1.24	0.18	0	5	17	5	8	nw.	F. M. Righter.
Camptonville (near).....	Yuba.....	3,500	5	50.7	.....	86	25	30	30	44	11.26	.....	6.09	T.	11	17	0	13	s.	Cal. Gas & Electric Co.
Cedarville.....	Modoc.....	4,675	18	41.8	+ 2.5	77	10	19	21	41	1.29	- 0.58	0.50	1.5	9	15	15	0	sw.	T. H. Johnstone.
Chico.....	Butte.....	189	42	51.4	- 2.4	70	24	31	27	36	3.14	+ 0.51	1.08	0	8	16	1	13	n.	C. H. Stephenson.
China Flat.....	Humboldt.....	600	3	50.2	.....	65	6	33	21	24	0.33	.....	3.65	0	14	9	10	11	s.	O. I. Westburg.
Chino **.....	San Bernardino.....	714	20	69.2	+12.2	88	1 <sup>h</sup>	48	11	.....	0.06	- 1.27	0.06	0	1	27	0	3	.....	Southern Pacific Co.
Cisco **.....	Placer.....	5,939	41	45.6	+ 6.9	86	8	40	3	40	5.45	+ 0.17	2.20	14.0	5	18	1	11	.....	Do.
Claremont.....	Los Angeles.....	1,200	20	61.4	+ 3.1	86	8	40	3	40	0.62	- 0.69	0.46	0	3	21	4	5	w.	Prof. F. P. Brackett.
Cloverdale.....	Sonoma.....	340	10	53.8	- 0.3	74	24	31	29	32	4.42	+ 1.39	2.28	0	9	25	1	4	n.	John O. Ogle.
Coalinga.....	Fresno.....	.....	.....	53.0	.....	75	23	31	11	35	0.92	- 0.17	0.19	0	3	19	5	6	sw.	Union Oil Co.
Colfax.....	Placer.....	2,421	4	50.4	- 1.3	75	23	31	11	35	0.92	+ 0.84	0.20	0	7	17	5	8	n.	Southern Pacific Co.
Colusa.....	Colusa.....	60	9	51.2	.....	69	24	33	25	21	2.39	- 1.17	0.19	0	3	19	5	6	.....	C. D. McComish.
Corning **.....	Tehama.....	277	26	56.6	+ 1.5	76	18	38	25	43	2.33	- 0.09	1.70	0	4	12	9	9	s.	Southern Pacific Co.
Cuyamaca.....	San Diego.....	4,677	13	46.8	+ 2.8	68	8	30	25	33	2.40	- 0.95	1.03	0	5	21	3	6	e.	L. L. Macquarie.
Davisville.....	Yolo.....	51	40	50.0	- 5.7	69	10	26	29	37	1.08	- 0.63	0.74	0	5	15	10	5	s.	S. H. Brackett.
Deer Creek.....	Nevada.....	3,700	5	43.7	.....	69	24	25	30	40	9.00	.....	4.73	0	11	16	4	10	sw.	Cal. Gas & Electric Co.
Del Monte.....	Monterey.....	25	1	52.5	.....	77	18	38	23	32	0.35	.....	0.24	0	2	19	1	10	nw.	H. R. Warner.
Delta.....	Shasta.....	1,138	27	51.2	- 0.3	75	27	25	29	50	5.08	- 2.10	1.25	0	8	16	2	12	.....	Southern Pacific Co.
Denair.....	Stanislaus.....	126	12	48.5	- 6.0	77	8	28	13	37	0.43	- 1.01	0.43	0	1	16	0	14	.....	Santa Fe Co.
De Sabla.....	Butte.....	2,500	8	49.0	.....	76	24	30	30	39	10.92	.....	4.15	0	9	14	5	11	sw.	Cal. Gas & Electric Co.
Dobbins (near).....	Yuba.....	1,650	8	54.6	.....	74	18	36	20	36	7.82	.....	4.71	0	11	13	10	7	s.	Do.
Downieville.....	Sierra.....	3,150	1	45.2	.....	69	24	26	28	39	7.44	.....	3.10	T.	11	16	3	11	s.	J. T. Mason.
Dudley.....	Kings.....	595	.....	57.6	.....	88	8	35	23	40	0.43	.....	0.43	0	1	22	4	4	nw.	Union Oil Co.
Dundley.....	Mariposa.....	3,000	3	47.4	.....	72	8 <sup>i</sup>	25	21	46	2.20	.....	1.25	0	5	16	6	8	nw.	W. H. Dudley.
Dunlap (near).....	Fresno.....	2,800	.....	47.2	.....	73	8	29	20	35	1.03	.....	0.98	0	2	19	6	5	.....	U. S. Forest Service.
Dunnigan **.....	Yolo.....	65	35	57.1	+ 2.1	75	8 <sup>j</sup>	38	23	.....	1.32	- 0.76	0.53	0	7	18	2	10	n.	Southern Pacific Co.
Dunsmuir **.....	Siskiyou.....	2,285	23	44.8	- 0.5	72	16	29	29	.....	7.94	+ 1.13	2.31	0	15	15	0	15	n.	Do.
Durham.....	Butte.....	160	17	50.6	- 1.8	72	27	32	24	40	3.22	+ 0.07	1.70	0	8	17	5	8	s.	R. W. Durham.
El Cajon.....	San Diego.....	482	13	60.2	+ 1.1	90	27	33	13	53	0.76	- 0.63	0.35	0	5	25	4	1	w.	H. H. Kessler.
Electra.....	Amador.....	725	8	52.4	.....	70	18	36	22	30	2.69	.....	1.10	0	6	20	2	8	n.	Cal. Gas & Electric Co.
Elsinore.....	Riverside.....	1,234	17	.....	.....	71	1	21	10	32	4.90	+ 0.63	2.20	12.0	7	18	5	7	.....	A. F. Schult.
Emigrant Gap.....	Placer.....	5,230	38	43.4	+ 0.4	82														



TABLE 1.—Climatological data for November, 1912. District No. 11—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of overcast days.
California—Continued.																				
Independence	Inyo	3,907	16	46.4	- 2.8	75	9	22	23	42	0.00	- 0.11	0.00	0	0	22	6	2	.....	U. S. Weather Bureau
Indio	Riverside	-20	34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. N. Johnson.
Inskip	Butte	4,975	5	45.3	.....	68	22	30	30	28	10.61	.....	4.15	13.0	9	14	4	12	.....	Cal. Gas & Electric Co
Ione**	Amador	287	34	55.1	+ 1.7	72	4	32	25	.....	1.88	- 0.27	0.63	0	7	18	0	12	nw.	Southern Pacific Co
Jamestown	Tuolumne	1,471	9	51.2	.....	70	27	32	20	35	1.46	.....	0.80	0	4	25	1	4	.....	Sierra Railway Co.
Kennett	Shasta	730	24	49.9	.....	73	24	31	22	35	9.94	.....	3.35	0	11	11	7	12	sw.	O. J. Egleston.
Kentfield	Marin	65	24	51.8	.....	67	20	33	22	31	7.31	+ 2.71	4.19	0	5	19	6	5	.....	Miss M. E. Parsons.
King City	Monterey	333	25	60.0	+ 6.1	91	25	25	24	63	0.28	- 0.99	0.28	0	1	23	0	7	n.	Southern Pacific Co.
Lake Eleanor	Tuolumne	4,700	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	O. J. Todd.
La Porte	Plumas	5,000	18	42.3	+ 1.3	68	25	24	30	35	9.96	+ 0.90	4.37	29.3	11	15	9	6	s.	Chas. W. Hendel.
Le Grand	Merced	255	12	51.0	- 0.7	72	6	32	25	36	0.82	- 0.62	0.82	0	1	19	0	11	.....	Santa Fe Co.
Lemon Cove	Tulare	600	17	56.3	+ 0.3	82	8	31	23	37	0.55	- 1.01	0.55	0	1	18	6	6	n.	G. W. Sandidge.
Lick Observatory	Santa Clara	4,209	23	49.8	+ 1.4	66	25	32	20	19	2.34	- 0.60	0.91	0	11	16	5	9	se.	The Director.
Livermore	Alameda	485	41	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. G. Still.
Lodi	San Joaquin	45	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Erza Fiske.
Lone Pine	Inyo	2,728	7	48.8	.....	77	9	20	30	50	0.00	.....	0.00	0	0	27	2	1	s.	G. F. Marsh.
Long Valley	Lassen	4,400	3	40.6	.....	63	8	22	21	30	0.95	.....	0.47	T.	4	3	15	12	.....	A. G. Evans.
Los Angeles	Los Angeles	293	35	65.1	+ 6.7	86	23	47	9	33	0.35	- 1.03	0.20	0	4	19	7	4	ne.	U. S. Weather Bureau
Los Banos**	Merced	121	25	58.7	+ 3.5	76	9	40	13	.....	0.00	- 1.03	0.00	0	0	12	0	18	n.	Southern Pacific Co.
Los Gatos	Santa Clara	600	25	55.6	+ 1.6	77	18	39	23	32	0.70	- 2.67	0.27	0	5	17	3	10	n.	F. H. McCullagh.
McCloud	Siskiyou	3,410	2	42.7	.....	64	26	20	29	33	8.62	.....	2.15	0	13	14	10	6	s.	F. F. Spencer.
MacDoel	do	4,528	7	36.5	.....	58	15	11	1	36	2.42	.....	1.05	0	5	19	0	11	s.	Butte Valley Land Co.
Madeline	Lassen	5,270	3	38.0	.....	60	27	18	28	36	0.77	.....	0.30	1.0	12	10	4	16	sw.	J. H. Williams.
Magalia	Butte	2,321	8	49.2	.....	80	24	30	29	45	12.40	.....	5.55	0	9	16	4	10	se.	Butte Co. R. R. Co.
Mammoth Tank	Imperial	257	34	63.0	- 0.8	85	9	42	28	38	0.00	- 0.11	0.00	0	0	22	6	2	nw.	Southern Pacific Co.
Maricopa	Kern	540	1	54.8	.....	81	8	34	30	35	0.39	.....	0.22	0	4	19	3	8	w.	Union Oil Co.
Marysville	Yuba	67	41	53.0	- 3.4	67	18	32	25	34	1.78	- 0.47	0.80	0	5	19	0	11	s.	Southern Pacific Co.
Mecca	Riverside	-158	6	61.2	.....	87	22	35	23	48	T.	.....	T.	0	0	22	8	0	e.	E. A. Palmer.
Menlo Park**	San Mateo	64	34	54.6	+ 1.4	67	6	31	28	.....	0.40	- 1.29	0.20	0	3	15	8	7	.....	Southern Pacific Co.
Merced	Merced	173	38	54.7	- 0.7	78	18	30	22	43	0.58	- 0.63	0.40	0	3	16	2	12	nw.	Santa Fe Co.
Middlewater	Kern	.....	1	55.5	.....	79	9	32	22	39	0.45	.....	0.29	0	2	14	14	2	s.	Union Oil Co.
Mill Creek (1)	Amador	.....	5	49.4	.....	72	18	29	30	38	4.66	.....	1.99	0	7	16	5	9	n.	Cal. Gas & Electric Co.
Milton (near)	Calaveras	660	21	54.6	- 1.0	73	8	36	20	26	1.15	- 1.08	0.58	0	6	16	8	6	nw.	J. H. Southwick.
Modesto**	Stanislaus	90	40	52.8	- 3.0	65	1	33	30	.....	0.05	- 1.31	0.05	0	1	25	2	3	sw.	Southern Pacific Co.
Mojave	Kern	2,751	35	56.6	+ 1.8	70	8	46	30	16	0.00	- 0.39	0.00	0	0	25	4	1	sw.	Do.
Mokelumne Hill	Calaveras	1,550	19	55.2	+ 3.4	74	18	36	30	23	2.69	- 1.03	1.06	0	6	16	1	13	.....	C. E. Prindle.
Mono Ranch	Ventura	3,210	6	49.6	.....	72	8	27	3	42	0.33	.....	0.18	0	2	24	3	3	w.	Hervert Lathrop.
Montague	Siskiyou	2,450	24	42.4	- 2.0	66	18	19	29	36	2.35	+ 0.51	1.14	0	6	10	10	10	s.	I. E. Deboy.
Monterey	Monterey	15	47	54.5	+ 0.2	66	4	38	23	.....	0.33	- 1.22	0.21	0	2	26	2	2	ne.	Southern Pacific Co.
Monterio	Kern	4,500	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John C. Knecht.
Mount Tamalpais	Marin	2,375	13	51.6	+ 1.0	70	22	38	30	23	4.87	- 0.55	3.04	0	9	14	6	10	sw.	U. S. Weather Bureau.
Napa City	Napa	20	35	51.4	+ 0.6	70	17	30	26	40	4.72	+ 2.23	2.00	0	7	0	26	4	s.	Alex. Hall.
Napa (S. H.)	do	60	34	55.0	+ 0.9	70	18	39	30	29	3.94	+ 1.45	1.57	0	8	10	8	12	sw.	W. H. Martin.
Needles	San Bernardino	477	20	61.3	+ 0.6	80	23	42	16	35	0.00	- 0.42	0.00	0	0	23	5	2	w.	Santa Fe Co.
Nellie	San Diego	5,350	3	53.2	.....	72	7	32	11	30	2.90	.....	1.50	0	3	25	1	4	.....	T. O. Bailey.
Nevada City	Nevada	2,580	20	48.8	+ 1.0	79	24	26	20	53	6.30	+ 0.11	3.19	0	11	17	4	9	se.	S. W. Marsh.
Newhall**	Los Angeles	1,200	35	62.9	+ 8.1	84	8	45	13	.....	0.29	- 1.08	0.29	0	1	21	0	9	ne.	Southern Pacific Co.
Newman	Stanislaus	91	23	53.0	- 3.1	78	8	30	23	40	0.24	- 0.88	0.15	0	2	24	3	3	w.	E. S. Wangenheim.
North Bloomfield	Nevada	3,214	15	51.0	+ 2.9	71	24	36	11	28	6.40	- 0.11	2.00	0	7	16	3	11	s.	J. R. McIntosh.
North Fork	Madera	3,000	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	U. S. Forest Service.
Oakdale**	Stanislaus	156	18	53.6	+ 1.7	72	8	33	22	.....	0.87	- 0.89	0.60	0	3	16	8	6	nw.	Southern Pacific Co.
Oak Grove	San Diego	2,751	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. L. Johnson.
Oakland	Alameda	36	36	54.2	+ 0.4	66	24	42	26	24	2.50	- 0.32	1.27	0	7	11	7	12	w.	Chabot Observatory.
Oceanside	San Diego	60	2	65.6	.....	92	16	49	26	32	0.68	.....	0.24	0	5	23	3	4	w.	H. D. Brodie.
Ojai Valley	Ventura	900	6	60.4	.....	92	22	31	5	55	0.20	.....	0.16	0	2	24	5	1	sw.	W. H. Duncan.
Orland	Glenn	254	30	52.0	- 4.4	73	24	30	30	38	1.57	- 0.64	0.85	0	8	14	9	7	n.	U. S. Reclamation Service.
Orleans	Humboldt	520	9	53.0	.....	73	6	35	25	32	8.84	.....	3.44	0	16	12	2	16	.....	F. T. Hale.
Oroville (near)	Butte	250	28	52.6	- 3.3	70	28	35	22	33	3.18	- 0.29	1.65	0	7	13	3	14	s.	E. D. Fairchild.
Palermo	do	213	21	52.2	- 0.5	78	8	28	15	38	.....	.....	.....	.....	.....	.....	.....	.....	.....	Western Pacific Co.
Palm Springs**	Riverside	584	23	61.4	- 3.0	78	13	46	28	.....	0.07	- 0.23	0.07	0	1	23	0	7	w.	Southern Pacific Co.
Pasadena	Los Angeles	827	22	60.3	+ 1.2	88	23	38	12	46	0.56	+ 0.16	0.30	0	3	23	3	4	sw.	E. D. Sorver.
Paso Robles	San Luis Obispo	800	25	52.2	+ 0.7	82	26	17	22	64	0.35	- 0.85	0.25	0	2	22	8	0	nw.	Dr. F. W. Sawyer.
Peachland	Sonoma	190	16	51.6	- 1.5	72	20	32	22	39	6.41	+ 1.55	2.56	0	9	15	8	7	se.	E. H. Parnell.
Placerville	Eldorado	1,875	23	4																



TABLE 1.—Climatological data for November, 1912. District No. 11—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
California—Continued.																				
Selma**	Fresno	311	26	53.6	- 0.2	70	10†	30	30	...	0.78	- 0.02	0.78	0	1	20	0	10	.....	Southern Pacific Co.
Seven Oaks	San Bernardino	5,000	2	46.6	—	74	8	18	11	46	1.53	—	0.96	2.0	3	23	4	3	w.	M. Lewis.
Shasta	Shasta	1,048	16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Dr. T. J. Edgecomb.
Sierra Madre	Los Angeles	1,400	15	62.1	+ 2.1	81	25	46	3†	28	0.48	- 1.40	0.41	0	2	23	1	6	w.	Mrs. A. E. Gregory.
Sierraville	Sierra	5,000	2	38.8	—	63	12	14	20	42	3.71	—	2.50	2.0	4	13	3	14	sw.	C. D. Johnson.
Sisson	Siskiyou	3,555	23	40.2	- 1.1	62	22†	21	30	41	5.15	+ 0.74	1.68	0	8	16	9	5	s.	Southern Pacific Co.
Soledad**	Monterey	188	38	61.8	+ 8.6	85	17†	35	30	—	0.17	- 0.88	0.13	0	2	23	4	3	n.	Do.
Sonora	Tuolumne	1,825	24	51.0	—	70	8	34	21†	30	1.51	- 2.14	0.78	0	6	20	7	3	nw.	Chas. P. Jones.
Southeast Farallon	San Francisco	30	9	55.3	—	63	17	48	25	10	1.33	—	0.42	0	9	13	5	12	nw.	U. S. Weather Bureau.
Springville	Tulare	4,000	5	50.2	—	73	27	29	11†	44	1.25	—	1.00	0	2	21	5	4	.....	D. L. Wishon.
Squirrel Inn	San Bernardino	5,280	2	46.8	—	65	9	31	19	22	1.91	—	1.52	0	3	24	1	5	n.	A. D. Frantz.
Stanwood	Butte	2,140	8	49.8	—	66	12	26	30	32	10.73	—	2.32	0	11	16	2	12	s.	Cal. Gas & Elect. Co.
Stirling City	do.	3,525	8	49.4	—	77	30	28	9	40	13.55	—	6.00	0	8	13	8	9	se.	Butte Co. R. R. Co.
Stockton (S. H.)	San Joaquin	23	41	50.6	- 3.3	68	7†	32	22	29	0.62	- 0.94	0.24	0	6	17	6	7	nw.	State Hospital.
Storey	Madera	296	12	51.8	- 0.4	79	7†	28	30	44	1.00	- 0.13	1.00	0	1	22	0	8	.....	Santa Fe Co.
Suisun**	Solano	20	32	57.7	+ 2.9	86	12	40	22†	—	2.60	+ 0.44	1.27	0	7	19	0	11	sw.	Southern Pacific Co.
Sulphur Banks	Lake	1,350	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	J. T. La Bree.
Summerdale	Mariposa	5,270	16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Bertus Gude, Jr.
Summit	Placer	7,017	39	30.1	- 5.7	54	25	19	11	24	4.60	+ 0.63	1.60	19.0	9	16	1	13	w.	Southern Pacific Co.
Susanville	Lassen	4,175	23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	James Branham.
Tamarack	Alpine	8,000	6	25.6	—	44	16†	3	13	36	4.92	—	1.80	45.0	9	13	6	11	sw.	Cal. Gas & Elect. Co.
Tehachapi**	Kern	3,964	35	50.7	+ 4.2	70	2	30	30	—	0.37	- 0.27	0.30	0	2	—	—	—	—	Southern Pacific Co.
Tehama	Tehama	220	41	54.6	- 0.5	76	2	38	25	—	1.72	- 0.67	1.00	0	3	13	4	13	s.	Do.
Tejon Ranch	Kern	1,500	10	47.4	—	62	20	32	14†	25	1.49	—	0.93	0	4	23	2	5	.....	S. E. Bailey.
Threerivers	Tulare	870	2	54.0	—	86	8	28	23†	45	0.76	—	0.71	0	2	16	7	7	sw.	E. D. Barton.
Towle	Placer	3,704	26	50.2	+ 1.5	83	21	28	30	49	—	—	—	—	—	19	4	7	n.	Southern Pacific Co.
Tracy**	San Joaquin	64	32	50.6	- 3.6	72	7	31	30	—	0.59	- 0.55	—	0	3	16	4	10	nw.	Do.
Ukiah	Mendocino	620	19	49.7	- 0.9	69	17†	28	22	39	7.05	+ 2.90	2.00	0	11	13	9	8	nw.	Dr. Geo. McCowen.
Upper Lake	Lake	1,350	27	49.4	- 1.4	72	21	27	21†	45	5.26	+ 2.22	1.95	0	7	13	5	12	se.	C. M. Hammond.
Vacaville	Solano	175	24	52.3	- 3.1	71	27†	30	23†	40	3.69	+ 0.83	1.77	0	8	14	11	5	sw.	G. C. Coburn.
Valley Springs**	Calaveras	673	23	54.5	- 1.9	72	7	38	20†	—	1.68	- 1.01	0.72	0	6	17	2	11	nw.	Southern Pacific Co.
Visalia	Tulare	334	24	49.6	- 4.0	78	22	27	30	43	0.30	- 0.55	0.30	0	1	25	0	5	se.	Santa Fe Co.
Warner Springs	San Diego	3,165	4	56.4	—	84	25†	33	10	50	0.98	—	0.45	0	6	24	6	0	.....	Mrs. F. S. Sandford.
Wasco	Kern	336	12	—	—	78	16	—	—	—	0.00	- 0.50	0.00	0	0	29	0	1	.....	Santa Fe Co.
Watsonville	Santa Cruz	23	16	51.9	- 2.7	84	18	23	22	55	0.79	- 1.77	0.26	0	5	15	9	6	w.	Spreckels Sugar Co.
Weaverville	Trinity	2,162	—	45.3	—	63	15	27	22	32	7.07	—	2.20	0	16	8	7	15	nw.	U. S. Forest Service.
Weitchpec	Humboldt	1,700	2	45.8	—	62	18	30	29	30	15.21	—	3.90	0	19	13	5	12	sw.	M. E. Lathrop.
Westley**	Stanislaus	90	23	54.5	- 2.2	75	8	32	23	—	0.49	- 0.66	0.28	0	3	21	0	9	n.	Southern Pacific Co.
Wheatland	Yuba	84	25	51.2	- 1.4	66	7†	34	23†	28	1.50	- 0.95	0.67	0	8	16	4	10	n.	William Lumbard.
Willows	Glenn	136	33	55.4	+ 0.6	77	18	32	29	31	1.83	- 0.13	0.57	0	8	17	6	7	n.	E. C. Mills.
Yosemite	Mariposa	3,945	8	42.5	—	70	8	21	19†	45	3.00	—	1.85	0	8	18	1	11	s.	J. P. Kelley.

\* , b , \* , etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

\*\* Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.



TABLE 2.—Daily precipitation for November, 1912. District No. 11, California.

Stations.	Watershed.	Day of month.																														Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Oregon.																																
Klamath Agency.	Klamath.			.05	1.20	1.00	.50			.50					.80					.80									.10		4.95	
Klamath Falls.	do.			.08		.51	1.04		.06	.17	.02		.02	.03	.36					.17										.05	2.51	
Lakeview.	Pitt.		T.	.02		.37	.92			.03	.01				.14					.12											.01	1.62
Merrill.	Interior drain- age.					.40	.69			.05					.75					.08												1.97
Vistillas.	Pitt.		.05	.15	.04	.47	1.31		.06	.97		.01	.05		.35					.25									.03		2.84	
Youna.	Interior drain- age.		T.	.15	.65	.83			.16		T.				.60					.17								.10			2.56	
California.																																
Aguanga.	Coast.		.19																											.30	0.49	
Alameda.	do.					.12	.18								.05					.12											0.59	
Alturas.	Sacramento.		.05	.07		.39	.16	.15													.31										1.01	
Angels Camp.	San Joaquin.																														0.25	
Angiola.	do.				.07						.09	.09																				0.48
Antelope Valley.	do.																														1.51	
Antioch.	do.		.07	.23		.18	.22	.33		.18	.24	.32									.22											1.36
Aptos.	Coast.				.18						.98											.22										2.53
Arrowhead Springs.	do.			.18							.98											.22										0.20
Auburn.	Sacramento.		.01		.08	.02	.64	.76			.80																					0.53
Avalon.	Ocean.		.09		.03						.06																					0.00
Azusa.	Coast.																															0.00
Bagdad.	Desert.																															0.00
Bakersfield.	San Joaquin.										.16																					0.21
Barstow.	Desert.											.16																				0.21
Bear River.	San Joaquin.																															8.46
Bear Valley (1).	Sacramento.		.12	.53		.25	5.00			.96	.75				.15						.70											1.90
Bear Valley (2).	San Joaquin.				.15							1.13									.51											1.90
Bear Valley Dam.	do.																															0.78
Beaumont.	do.		.23								.30																			.25		0.92
Beaumont (near).	do.		.24								.45																			.23		1.07
Belotta.	do.		.05		.12		.15				.55										.20											2.90
Ben Lomond.	Coast.						1.90			.70											.30											3.89
Berkeley.	do.		T.	.22	.01	.19	2.39	.02		.65	.07		.02		.03						.29											2.32
Biggs.	Sacramento.		.04		.15	.10	.70	.15			.75				.13						.30											0.00
Bishop.	Owens.																															0.20
Bishop Creek.	do.									.20																						12.20
Blocksburg.	Coast.		.10	.11	.30	.25	2.48	3.44	T.	T.	1.25	.81	.49	.30	.35	.80	.12			1.09	.10	.11							.10		8.88	
Blue Canon.	Sacramento.				.65		4.10	2.45			1.38										.30											0.00
Blythe.	Desert.																															1.77
Boulder Creek.	Coast.						.53				.95										.29											21.17
Branscomb.	do.		.98	.22	.50	.44	6.60	6.05		.16	1.34	.99	.49	.45	.17	1.50				1.25										T.		T.
Brawley.	Desert.																															2.78
Burney.	Sacramento.		.24	.05	T.	.08	.93	.03	T.	.82	.08	T.	.04		.08					.43												4.01
Butte Valley.	do.					1.88	.55			.48					.25					.93												0.40
Cahuilla.	Coast.			.10							.15																					0.00
Calixico.	Desert.																															0.00
Caliente.	San Joaquin.																															5.68
Calistoga.	Coast.				.23	.08	2.21	.98		.23	T.	1.11			.33	.08					.43											0.34
Campbell.	do.		.03	.02						.18	.07										.04											0.92
Campo.	do.		.26	.05							.17																					11.26
Camptonville (near).	Sacramento.		.15	.19	.14	.65	6.09	.20		1.48	1.03				.22					1.04	.07											1.29
Cedarville.	Mountain Lakes		.06	.07		.43	.50			.03	.03				.12					.07												4.31
Chester.	Sacramento.		.22	.20	.01	.37	1.85		.03	.95	.21				.42					.35												3.14
Chico.	do.		.14	.32		.54	1.08			.25	.10				.29					.42												3.44
Chico (near).	do.		.15	.34		.17				.46					.28					.48												9.33
China Flat.	Coast.		.32	.16		1.26	3.65		.10	.26	.96	.09	.21		1.22	.04				.27	.67											0.06
Chino.	do.			.06																												5.45
Cisco.	Sacramento.		.20	T.			2.20	1.95			.50										.60											0.62
Claremont.	Coast.			.06	T.							.46																				5.42
Cloverdale.	do.		.01	.17	T.	1.07	2.28		.02	.76	.48	T.			.32						.31											0.34
Coalinga.	San Joaquin.			.03																												5.92
Colfax.	Sacramento.		.04	T.	.31	T.	2.00	1.22		T.	1.47	.22									.66											6.94
Colgate.	do.				.18	.06	3.20	1.42			1.28										.67											0.39
Colusa.	do.									.15											.05											2.33
Corning.	do.					1.70	.19			.26					T.	.19					.18											0.11
Corona.	Coast.																															55.41
Cuy																																



TABLE 2.—Daily precipitation for November, 1912. District No. 11—Continued.

[illegible]



Stations.	Watershed.	Day of month.																															Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
<i>California—Contd.</i>																																	
Mount St. Helena...	Coast.....			.40		* 6.55		1.15		2.00					.10					1.10												11.30	
Napa City.....	do.....			.18		2.00	1.60	.10		.36					.20					.28												4.72	
Napa (S. H.)....	do.....			.13	.03	1.57	1.38			.38				.21	.02					.22												3.94	
Needles.....	Desert.....																															0.00	
Nellie.....	Coast.....			.40								1.50																		1.00		2.90	
Nevada City.....	Sacramento.....	.14	.11	.12	.20	3.19	.07	T.	.78	1.01	T.				.13					.40	.15											6.30	
Newcastle.....	do.....																															0.29	
Newhall.....	Coast.....			.09		T.					.29																					0.24	
Newman.....	San Joaquin.....	.30	.15			2.00	1.50	.80	.80	.95																						6.40	
North Bloomfield.....	Sacramento.....																															4.29	
North Fork.....	San Joaquin.....					2.00	.56			.50	.44				.29					.35												0.87	
North Lakeport.....	Coast.....	.20								.60														.14									2.50
Oakdale.....	San Joaquin.....		.13																													3.60	
Oak Grove.....	Coast.....		T.	.16		.04	1.27			.64	.20				.02					.17												0.68	
Oakland.....	do.....			.17		.24	1.96			.90	.10									.40												0.20	
Oakville.....	do.....		.17		.15					.24																						1.57	
Oceanside.....	do.....		.04		T.					.16																						8.84	
Olaj Valley.....	Sacramento.....	.12	.03	T.	.20	.85	T.		.04	.16				.07						.10												3.18	
Orland.....	Klamath.....	.28	.10	.15	.97	3.44	.23	.05	.48	.55	.04	.09		1.40	.02				.47	.48												0.57	
Orleans.....	Sacramento.....	.09			.17																												



TABLE 2.—Daily precipitation for November, 1912. District No. 11—Continued.

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
California—Contd.																																	
Three Rivers.....	San Joaquin.....										.71	.05									T.												0.76
Towle.....	Sacramento.....																																†0.59
Tracy.....	San Joaquin.....																																0.53
Tulare.....	do.....			T.					T.	T.	.48										.05												0.48
Tustin (near).....	Coast.....			.15		.04						.11																			.18		7.05
Ukiah.....	do.....	.18	.30	.10	2.00	1.86				.70	.54	.07	.03		.27						1.00												
Upland.....	do.....																																
Upper Lake.....	Sacramento.....	T.	.19	T.	1.95	1.38				.66	.45	T.			.24						.39												5.26
Upper Matole.....	Coast.....	.24	.29	.14	2.03	4.84	.15	.16	4.00		.77	1.14	.14	1.93	.13				.01	.77	.70										.03		17.47
Vacaville.....	Sacramento.....	.06		.20		1.24	1.77			.25	.03		.05							.09													3.69
Valley Springs.....	San Joaquin.....			.22		.28	.21			.72	.03									.22													1.68
Visalia.....	do.....									.30																							0.30
Warner Springs.....	Coast.....		.45	.03	.11						.05									.02											.32		0.98
Wasco.....	San Joaquin.....																																0.00
Watsonville.....	Coast.....			.11		.05	.26			.22										.15													0.79
Weaverville.....	do.....	.18	.20	.10	.04	2.20	2.12	.04		.63	.13	.09	.15	.01	.88				.03		.25												7.07
Weitchpec.....	Klamath.....	.28	.14	.19	.53	2.91	3.90	.38	.08	1.86	.83	.48	.17	.24	1.46	.01	.04	.01		1.45											.02		15.21
West Branch.....	Sacramento.....																																
Westley.....	San Joaquin.....				.10					.28	.11																						0.49
West Point.....	do.....			T.	.12		.62	1.14				1.38									.73												3.99
West Saticoy.....	Coast.....										.22																			T.			0.22
Wheatland.....	Sacramento.....	T.	.08		.19	.67	.02			.23	.05				.05					.21													1.50
Willows.....	do.....	.27	.06		.41	.57				.20	.01				.10					.21													1.83
Yosemite.....	San Joaquin.....			*	.21		.40	.15		*	1.85									.39													3.00

\* Precipitation included in that of the next measurement.

† Separate dates of falls not recorded.

|| Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.



TABLE 3.—Maximum and minimum temperatures at selected stations for November, 1912. District No. 11.

Date.	Lake View, Oreg.		California.																											
			Alturas.††		Barstow.		Branscomb.		Brawley.		Colusa.		Eureka.		Fresno.		Independence.		Los Angeles.		Mount Tamalpais.		Nevada City.		Red Bluff.					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.				
1.....			53	20	81	40	48	38			62	40	57	48	74	45	58	28	79	54	55	48	63	33	63	41				
2.....			49	33	74	46	52	40	75	50	62	40	54	47	65	49	54	38	65	53	52	42	57	40	53	44				
3.....	40	33	41	35	73	44	50	38	75	52	62	38	54	46	60	44	57	27	65	48	45	41	49	36	50	42				
4.....	44	25	45	29	72	44	49	37	76	48	58	38	56	49	64	44	57	31	62	51	50	41	58	30	57	45				
5.....	38	32	43	35	72	38	52	45	77	54	55	48	60	51	66	41	56	24	66	49	49	44	56	34	53	49				
6.....	50	32	53	40	76	43	57	49	79	43	57	48	60	52	74	52	60	35	74	51	54	49	51	42	56	51				
7.....	45	34	54	36	78	50	57	46	82	49	62	53	61	52	75	48	64	31	82	57	55	52	64	48	58	53				
8.....	57	37	62	40	79	52	57	43			66	49	65	52	80	51	66	38	80	55	54	50	70	41	64	52				
9.....	52	38	56	41	81	48	52	42	86	52	62	53	60	49	70	46	75	34	68	47	53	43	52	45	59	53				
10.....	42	33	45	34	66	46	52	40	85	45	59	48	55	46	61	48	60	46	62	54	48	41	47	37	59	46				
11.....	42	27	51	21	74	48	49	35	75	50	59	37	57	48	61	42	60	30	68	48	54	41	63	27	58	45				
12.....	53	38	60	34	70	35	58	45	73	47	61	41	61	56	63	43	59	32	79	50	52	46	66	30	61	47				
13.....	50	29	61	28	72	35	52	40	77	40	59	42	60	52	65	40	59	26	84	58	58	46	65	32	55	46				
14.....	45	33	53	39	76	38	57	46	79	38	63	45	60	46	66	43	60	32	76	55	53	46	57	39	58	50				
15.....	51	31	61	30	77	37	66	37	80	38	63	47	58	45	66	43	66	34	79	52	55	49	69	31	65	48				
16.....	59	27	65	20	74	34	68	40	82	40	61	38	62	46	68	41	66	38	85	59	63	51	70	31	64	44				
17.....	54	28	60	26	76	36	70	42	86	45	63	40	61	48	74	41	62	28	82	59	65	51	71	31	63	43				
18.....	55	34	63	34	72	39	70	43	80	49	63	37	71	47	73	40	60	28	82	59	64	51	74	30	64	42				
19.....	48	32	53	35	76	40	52	39	76	50	63	44	55	47	75	47	61	28	73	54	53	41	55	31	51	43				
20.....	43	19	48	21	74	40	65	35	78	41	62	41	57	38	56	44	57	40	80	53	56	40	66	26	64	43				
21.....	51	19	58	17	73	43	72	33	71	53	66	35	70	40	64	39	64	32	80	58	61	47	73	28	60	42				
22.....	53	26	62	20	72	32	71	35	79	57	63	34	62	41	66	39	62	26	84	56	70	47	76	28	67	38				
23.....	55	27	55	21	74	34	62	37	81	35	60	34	57	45	64	36	64	22	86	57	57	45	69	27	64	39				
24.....	53	22	58	14	78	36	73	35	82	35	69	44	57	41	62	37	68	39	79	53	64	51	79	26	74	47				
25.....	60	25	60	15	76	38	71	35	82	37	62	33	56	41	68	43	63	30	80	53	62	52	76	29	66	38				
26.....	51	27	63	15	74	36	72	38	81	35	61	33	59	43	70	39	63	25	83	50	61	56	72	31	64	39				
27.....	54	27	64	20	75	34	72	39	82	35	64	34	53	42	72	42	63	30	86	55	68	54	76	31	65	40				
28.....	56	29	61	23	74	34	70	40			63	32	53	44	70	41	59	26	79	59	64	55	74	29	66	40				
29.....	49	20	55	15	72	34	62	41	76	38	58	46	52	44	71	41	58	27	73	55	58	39	68	30	56	36				
30.....	40	21	45	19	72	54	64	42			56	35	53	41	59	42	64	36	67	55	46	38	58	27	56	41				
Mns.....	49.6 <sup>b</sup>	28.8 <sup>b</sup>	55.2	27.0	74.8	40.3	61.7	39.8	79.0 <sup>d</sup>	44.5 <sup>d</sup>	61.5	40.9	58.5	46.2	67.5	43.0	61.5	31.4	76.3	53.9	56.6	46.6	64.8	32.7	60.4	44.1				

Date.	California.																			
	Redlands.		Sacramento.		San Diego.		San Francisco.		San Jose.		San Luis Obispo.		Santa Barbara.		Santa Rosa.		Sisson.		Stockton.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	69	40	60	46	76	52	61	51	65	40	74	40	73	43	66	39	56	34	62	41
2.....	73	49	59	50	65	56	61	52	62	43	62	46	60	54	62	37	42	36	60	50
3.....	61	44	56	45	64	54	55	50	61	38	62	43	64	43	58	42	40	30	60	45
4.....	61	46	59	44	62	51	60	49	62	42	60	45	64	51	65	38	42	36	59	40
5.....	67	43	59	46	63	46	60	49	63	40	66	45	65	42	57	46	42	37	59	43
6.....	76	42	56	50	66	50	61	58	66	57	66	45	70	44	60	55	42	33	64	53
7.....	85	44	62	54	68	52	66	57	71	54	80	49	75	45	65	49	43	37	68	52
8.....	87	54	66	52	73	53	66	57	68	53	74	45	75	47	66	55	49	38	68	54
9.....	80	45	59	52	62	45	59	52	62	53	70	42	63	49	61	52	48	40	64	49
10.....	56	48	60	47	59	54	58	52	62	45	60	49	65	48	60	49	50	29	59	48
11.....	68	39	64	43	63	51	62	48	63	38	63	47	67	43	62	39	52	33	60	42
12.....	76	41	63	45	72	49	62	51	64	43	70	56	74	42	67	47	48	28	61	42
13.....	80	40	60	44	72	52	62	50	64	40	80	50	75	43	64	45	48	36	60	39
14.....	77	43	61	50	72	52	60	52	69	46	68	45	73	43	66	45	48	28	61	44
15.....	81	43	63	41	71	51	63	48	66	45	72	54	78	48	66	40	55	29	60	39
16.....	80	46	61	43	86	55	65	49	72	38	82	52	83	49	68	38	51	31	65	42
17.....	77	42	60	42	77	62	66	53	64	39	83	44	82	51	67	38	50	30	61	40
18.....	76	46	67	41	78	57	67	52	80	37	79	44	81	51	70	36	60	31	65	36
19.....	72	44	61	45	72	55	59	52	62	46	62	40	68	44	59	36	40	28	61	40
20.....	70	42	63	43	64	52	68	49	67	43	66	49	65	47	71	36	45	22	57	39
21.....	78	59	60	42	73	49	65	53	69	36	82	45	74	43	65	30	48	24	56	37
22.....	80	41	63	40	78	51	65	50	70	31	83	39	83	44	65	30	62	30	58	32
23.....	83	43	59	35	79	53	63	48	63	33	75	39	73	43	68	34	50	28	61	33
24.....	83	44	65	40	69	46	68	51	71	42	84	51	80	47	66	32	52	27	51	33
25.....	82	42	63	40	71	49	67	50	70	36	84	41	76	41	67	32	52	28	54	36
26.....	83	44	62	40	73	52	67	49	70	34	76	34	74	40	68	31	52	28	58	34
27.....	82	45	63	41	75	54	65	50	70	34	80	36	78	41	67	31	60	26	57	33
28.....	79	45	62		72	54	59	48	68	36	72	39	73	44	66	31	6			



## CLIMATOLOGICAL DATA FOR NOVEMBER, 1912.

## DISTRICT NO. 12, COLUMBIA VALLEY.

EDWARD A. BEALS, District Editor. THEODORE F. DRAKE, Acting District Editor.

## GENERAL SUMMARY.

The month, as a whole, was an average one. The first half was stormy and the rainfall abundant. High winds were frequent on the Oregon coast and in western Washington, and warnings were displayed several times during this period. There were no losses to shipping but a few craft of the smaller type foundered or went ashore. The weather during the latter part of the month was chiefly dominated by areas of high pressure which occupied the West and Middle West. The days were clear and moderately warm and the nights cold. Less snow fell than is usual for November. Outdoor work proceeded with regularity, the fair weather of the last fortnight, especially, favoring farm and construction work. Transportation of all kinds proceeded without material interruption except that vehicle traffic in mountainous sections was impeded by muddy roads, as is usual at this season of the year.

## TEMPERATURE.

Temperatures averaged above normal over almost the entire district east of the Cascade Mountains, and also in northwestern Washington and the lower Willamette River Valley. Subnormal temperatures predominated in southwestern Oregon and southwestern Washington. The highest mean temperatures lay between 45° and 50° and occurred mainly west of the Cascades. The lowest mean temperatures, those averaging 30° or less, were recorded in the mountainous interior of Idaho. Low mean temperatures were also common in Montana and central Oregon. There were no pronounced extremes of temperature, and, except for a few stations in Idaho and Wyoming, no zero or lower temperatures were reported. A majority of maximum temperatures were reported during the second and third weeks of the month, and nearly all minimum temperatures during the last few days.

The temperature for the district averaged 40.4°, or 1.1° above the normal. The highest mean temperature was 51.2° at Gold Beach, Oreg., and the lowest 26° at Moran, Wyo. The highest maximum temperature was 75° at San Jacinto, Nev., on the 15th, and the lowest minimum -3° at Moran, Wyo., on the 27th.

## PRECIPITATION.

Precipitation was less than normal at a great majority of places, and was mainly confined to the first half of the month, although light rains fell on the 19th and 20th and on the 28th, 29th, and 30th. In the valleys of western Oregon and western Washington the amounts ranged from 5 to 8 inches, and along the coast and in the Coast Range of mountains the amounts were from 30 to 40 per cent greater. In the eastern part of the district the precipitation was lighter and there was a greater diversity in

amounts recorded in different sections. In general, they were least in central Oregon and southern Idaho and greatest in northeastern Washington and northern Idaho. Less than the usual proportion of precipitation was in the form of snow.

The average precipitation for the district was 3.63 inches, or 0.32 inch below the normal. The greatest monthly amount was 24.08 inches at Quinault, Wash., and the least monthly amount 0.01 inch at Willow Glen Stock Farm, Mont. The largest amount recorded in 24 hours was 3.03 inches at Glenora, Oreg., on the 11th. The greatest snowfall for the month was 71 inches at Snoqualmie Pass, Wash., and the next largest amount was 63 inches at Musick, Oreg.

## MISCELLANEOUS PHENOMENA.

Killing frosts that obtained generally about the 25th and 26th practically ended the growing season at all stations of moderate elevations. Stations on the seacoast and at low elevations on Puget Sound and the lower Columbia had only heavy frosts in many instances. The highest wind velocity occurred at Tatoosh on the 12th and reached a maximum of 84 miles from the south. At North Head the maximum velocity was 76 miles per hour from the southeast on the same date. A gale occurred at Lewiston on the 9th. Thunderstorms, attended in some instances by local hail storms, occurred generally between the 2d and 9th. Fogs occurred most frequently during the latter half of the month.

## THE RIVERS.

The Willamette River fell slightly until the 2d and 3d after which general rains increased its stages to a maximum about the middle of the month. No flood stages were reached except at Jefferson, Oreg., where a stage of 10.6 feet was reached on the afternoon of the 12th. The mean for the month was nearly 1½ feet above normal. Its highest reading at Portland was 11 feet on the 14th, and its highest at Eugene was 8.4 feet on the 10th. Its lowest reading at Eugene was 4 feet on the 1st, 28th, and 30th, and its lowest at Portland was 2.6 feet on the 1st and 2d.

The Columbia River averaged only slightly above normal. Its changes were not marked except at Vancouver where the highest stage, 8.2 feet on the 14th, was due to the rise in the Willamette. The highest at Umatilla was 4.4 feet on the 15th and 18th, and the lowest at Umatilla was 3.3 feet on the 30th. Its mean stage was about a foot above the mean of the preceding month.

The flow in the Snake River was quite uniform throughout the month and its mean stages were only slightly higher than those for October. The monthly mean was about one-half foot above normal. The highest reading at Lewiston was 3.7 feet on the 11th to 13th, inclusive, and the lowest reading was 2.3 feet on the 28th and 30th.



TABLE 1.—Climatological data for November, 1912. District No. 12, Columbia Valley.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelting.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Montana.																				
Anaconda.....	Deer Lodge.....	5,300	10	36.0	+ 2.0	53	17†	13	27	38	0.53	- 0.25	.....	3.6	4	7	21	2	.....	C. D. Demond.
Butte.....	Silver Bow.....	5,716	17	35.8	+ 2.4	52	22	13	27	34	0.43	- 0.35	0.25	3.0	4	14	5	11	nw.	J. R. Wharton.
Columbia Falls.....	Flathead.....	3,100	16	35.9	+ 3.7	57	13	11	27	32	1.82	- 0.59	0.33	2.2	13	6	3	20	sw.	J. M. Grist.
Como.....	Ravalli.....	3,700	3	41.0	.....	63	13	19	27	32	1.21	.....	0.52	1.5	11	11	9	10	.....	Hiram Platt.
Dayton.....	Flathead.....	7	7	38.5	.....	58	15	16	27	28	0.20	.....	0.20	.....	1	15	3	12	.....	A. J. Ruechell.
Deer Lodge.....	Deer Lodge.....	4,529	.....	.....	.....	.....	.....	.....	.....	.....	0.59	.....	0.50	1.1	5	8	17	5	.....	E. B. Grant.
East Anaconda.....	do.....	5,500	6	34.5	.....	55	18	17	1	31	0.47	.....	.....	4.6	4	7	21	2	.....	C. D. Demond.
Fortine.....	Lincoln.....	2,975	6	32.8	.....	54	22	4	26	29	1.25	.....	0.24	0.2	10	4	5	21	w.	Mike Petery.
Hamilton.....	Ravalli.....	3,575	9	38.0	+ 3.8	61	18	13	27	34	1.22	+ 0.40	0.42	0.5	9	9	4	17	s.	Hamilton Chamber of Com.
Hat Creek.....	Powell.....	6,000	2	.....	.....	.....	.....	.....	.....	.....	1.08	.....	0.36	19.1	10	4	10	16	w.	M. K. Landreth.
Haugan.....	Missoula.....	3,150	.....	34.0	.....	54	22	12	27	30	3.66	.....	0.76	5.2	11	2	13	15	sw.	U. S. Forest Service.
Heron.....	Sanders.....	2,261	.....	37.2	.....	57	22	20	26	28	4.97	.....	0.58	1.5	15	10	0	20	w.	E. Knott.
Kalispell.....	Flathead.....	2,965	13	35.7	+ 3.7	58	13	14	27	24	0.83	- 1.07	0.32	1.2	10	3	8	19	sw.	U. S. Weather Bureau.
Libby.....	Lincoln.....	2,055	2	35.2	+ 0.5	59	22	11	27	27	3.26	- 1.01	0.65	1.0	14	1	11	18	.....	U. S. Forest Service.
Lost Creek.....	Deer Lodge.....	5,200	2	.....	.....	.....	.....	.....	.....	.....	0.54	.....	0.54	10.0	1	16	10	4	w.	Frank Henault.
Missoula.....	Missoula.....	3,225	32	36.5	+ 4.1	60	9	15	27	28	0.93	- 0.40	0.20	.....	10	.....	.....	.....	.....	U. S. Weather Bureau.
Ophir.....	Powell.....	6,800	3	.....	.....	.....	.....	.....	.....	.....	1.13	.....	0.40	6.7	5	16	6	8	w.	E. S. Wilton.
Ovando.....	do.....	4,207	12	32.4	+ 2.8	52	22	9	27	32	1.39	- 0.85	0.28	7.9	12	0	30	0	w.	S. B. Muchmore.
Philipsburg.....	Granite.....	5,275	8	.....	.....	.....	.....	.....	.....	.....	0.98	+ 0.12	0.20	7.0	8	.....	.....	.....	.....	G. T. Bramble.
Plains.....	Sanders.....	2,475	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	James M. Self.
Pleasant Valley.....	Flathead.....	3,500	4	32.8	.....	53	22	7	27	35	3.01	.....	0.62	4.0	15	9	0	21	.....	A. D. Stillman.
Polson.....	do.....	2,920	4	38.2	.....	55	21	18	27	24	0.50	.....	0.21	.....	5	.....	.....	.....	.....	F. P. Brown.
St. Ignatius.....	Missoula.....	2,700	6	37.4	.....	63	13	11	26	31	0.77	.....	0.23	1.5	6	3	6	21	se.	U. S. Reclamation Service.
Saltese.....	do.....	3,600	7	.....	.....	.....	.....	.....	.....	.....	2.62	.....	0.48	8.0	11	9	0	21	w.	E. K. Tarbox.
Stevensville.....	Ravalli.....	.....	.....	36.7	.....	60	13	13	27	31	1.07	.....	0.38	T.	5	13	8	9	s.	University Orchard Co.
Thompson Falls.....	Sanders.....	2,462	.....	36.9	.....	59	22	15	27	27	2.03	.....	0.55	0.2	14	6	8	16	w.	U. S. Forest Service.
Trout Creek.....	do.....	2,375	.....	.....	.....	.....	.....	.....	.....	.....	8.53	.....	1.12	5.6	17	1	16	13	sw.	James Hyient.
Willow Glen Stock Farm.....	Deer Lodge.....	5,064	1	36.8	.....	58	26	12	29	36	0.01	.....	0.01	.....	1	16	6	8	sw.	G. E. Luce.
Wyoming.																				
Afton.....	Uinta.....	6,200	8	.....	.....	58	9†	.....	.....	.....	0.66	.....	0.21	2.0	5	14	4	12	.....	A. V. Call.
Alta.....	do.....	7,000	2	30.0	.....	59	15	- 1	27	40	4.33	.....	2.70	12.0	6	11	6	13	sw.	Mrs. Lucy Brown.
Bechler River.....	Yellowstone Park.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	U. S. Army.
Bedford.....	Uinta.....	5,900	12	32.0	+ 1.2	58	9	3	27	36	0.94	- 0.11	0.25	9.0	7	14	5	11	w.	C. G. Heiner.
Moran.....	do.....	.....	.....	26.0	.....	50	9	- 3	27	31	0.94	.....	0.20	10.5	10	0	15	15	.....	U. S. Reclamation Service.
Snake River.....	Yellowstone Park.....	7,000	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	U. S. Army.
Nevada.																				
San Jacinto.....	Elko.....	.....	7	35.1m	.....	75m	15	4m	25†	47m	0.06	.....	0.06	0.6	1	14	6	10	s.	F. W. Marchant.
Utah.																				
Standrod.....	Boxelder.....	.....	7	36.8	.....	57	9	18	26	30	0.87	.....	0.32	5.4	7	19	5	6	sw.	T. B. Jones.
Idaho.																				
Albion.....	Cassia.....	4,650	10	38.8	+ 1.0	64	8	13	27†	45	1.06	- 0.26	0.50	0	4	9	18	3	w.	C. E. Bock.
Almo.....	do.....	.....	3	.....	.....	.....	.....	.....	.....	.....	1.73	.....	0.70	1.0	6	20	5	5	.....	Wm. D. Cahoon.
American Falls.....	Oneida.....	4,341	21	35.6	+ 0.5	60	8†	4	28	44	1.12	- 0.13	0.68	.....	3	24	5	1	ne.	George Stoll.
Arrowrock.....	Boise.....	3,100	.....	40.9	.....	65	10	19	26	35	0.65	.....	0.21	0	6	14	9	7	w.	U. S. Reclamation Service.
Blackfoot.....	Bingham.....	4,503	16	35.4	+ 1.2	63	9	9	27	38	0.85	- 0.07	0.22	0.5	6	13	13	4	sw.	E. A. Dowd.
Blackfoot Dam.....	Bannock.....	6,200	3	32.6	.....	55	9	6	27	35	1.03	.....	0.28	11.0	8	12	8	10	w.	S. C. Waddell.
Bogus Creek.....	Boise.....	4,200	4	.....	.....	.....	.....	.....	.....	.....	2.51	.....	0.47	2.0	11	9	13	8	.....	F. P. Ingraham.
Boise.....	Ada.....	2,739	27	43.0	+ 3.4	68	9	24	29	27	0.88	+ 0.02	0.56	T.	7	5	8	17	nw.	U. S. Weather Bureau.
Bonniers Ferry.....	Bonner.....	1,850	5	37.4	.....	57	19	3	28	34	4.45	.....	1.40	0	13	1	8	21	sw.	W. H. Heideman.
Boulder Mine.....	Boise.....	4,800	3	.....	.....	.....	.....	.....	.....	.....	3.15	.....	1.07	7.1	11	17	6	7	.....	Patrick Moriarty.
Buhl.....	Twin Falls.....	3,800	5	40.6	.....	65	8	20	26†	31	1.07	.....	0.72	T.	7	15	8	7	se.	S. C. Orr.
Caldwell.....	Canyon.....	2,372	8	41.6	.....	67	9	18	24†	30	0.92	.....	0.42	0	6	8	12	10	e.	W. J. Boone.
Caldwell Exp. Station.....	do.....	.....	.....	40.1	.....	61	9	16	24	30	0.95	.....	0.46	0	5	.....	.....	.....	.....	C. B. Hampson.
Cambridge.....	Washington.....	2,651	16	40.0†	+ 2.4	60†	14	16†	26	34†	2.00	- 0.45	1.00	.....	8	.....	.....	.....	nw.	Charles H. Shepherd.
Cedar Creek Dam.....	Twin Falls.....	5,220	2	.....	.....	.....	.....	.....	.....	.....	1.20	.....	0.32	5.0	6	16	5	9	sw.	Robert Hoffman.
Chesterfield.....	Bannock.....	5,424	16	32.4	+ 2.1	51	8	8	27	33	1.32	+ 0.44	0.50	4.5	6	16	9	5	.....	Charles S. West.
Clarks Fork.....	Bonner.....	2,084	.....	37.8	.....	56	22	21	26	22	6.11	.....	0.75	.....	18	7	7	16	e.	William Potter.
Clyde.....	Custer.....	6,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. L. Sutcliffe.
Council.....	Adams.....	3,059	1	39.7	.....	62	9†	20	21	29	3.19	.....	1.08	2.0	10	.....	.....	.....	.....	F. L. Featherston.
Culdesac.....	Nez Perce.....	1,520	4	40.4	.....	62	9	23	27	28	2.05	.....	0.50	0.5	11	7	7	16	.....	Mrs. B. B. Caldwell.
Deary.....	Latah.....	2,854	.....	.....	.....	.....	.....	.....	.....	.....	2.80	.....	.....	2.0	.....	.....	.....	.....	.....	W. J. Davis.
Dent.....	Clearwater.....	1,350	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Emil Schuessler.
Driggs.....	Fremont.....	6,097	5	30.6	.....	57	9	2	27	38	1.03	.....	0.20	13.1	7	9	7	14	sw.	Walter H. Durrant.
Emmett.....	Canyon.....	2,350	5	41.7	.....	69	9	19	25	31	0.76	.....	0.30	0	4	7	12	11	s.	U. S. Forest Service.
Forney.....	Lemhi.....	6,000	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. B. Merritt.
Garnet.....	Elmore.....	2,575	13	45.1	+ 1.3	70	9	20	24	32	0.70	- 0.02	0.40	0	3	20	4	6	e.	Asa A. Kenison.
Glenns Ferry.....	do.....	2,569	4	40.3	.....	63	10	15	27	37	0.24	.....	0.08	0	5	19	2	9	.....	I. E. Perkins.
Gooding.....	Lincoln.....	3,572	3	39.0†	.....	64†	9	12	26	36†	0.88	.....	0.65	0	7	16	5	9	e.	John Krall, Jr.
Grand Forks.....	Shoshone.....	3,000	3	35.4	.....	50	22†	15	27	28	6.31	.....	1.26	7.0	16	3	12	15	w.	John E. Keach.
Grandview.....	Owyhee.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. G. Massey.
Grimes Pass.....	Boise.....	5,200	3	.....	.....	.....	.....	.....	.....	.....	2.71	.....	0.97	9.9	11					



TABLE 1.—Climatological data for November, 1912. District No. 12—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.			
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.			Number of partly cloudy days.	Number of overcast cloudy days.	
Idaho—Continued.																					
Little Camas.	Elmore.	5,000	3								1.46		0.56	8.5	8	7	5	18	e.	Solon McCoy.	
Loon Creek.	Custer.	6,000	3	30.7		51	13	4	29	45	1.09		0.32	3.5	12	10	5	15	sw.	Mrs. Mary Williams.	
Mackay.	do.	5,897	5	30.8		54	11	8	29	31	0.03		0.02	0.5	2	17	12	1	nw.	U. S. Forest Service.	
Meridian.	Ada.	2,657	2	42.2		65	9	20	26	29	0.94		0.61	T.	7	5	11	14	se.	A. W. Garrett.	
Mesa.	Adams.	3,275	2	39.3		64	a	9	22	29	26	1.90		0.96		5	10	0	20	sw.	I. S. Carter.
Middle Fork.	Idaho.	1,397	2	40.2		56	13	25	27	19	2.89		0.45	0	14	12	1	17		Jos. McGhee.	
Milner.	Twin Falls.	4,110	8	40.2		68	9	17	26	39	1.56		0.75	0.5	5	16	8	6		James K. Young.	
Moscow.	Latah.	2,748	20	39.4	+ 1.6	56	9	22	26	25	2.60	- 0.63	0.55	1.0	15	2	10	18	se.	University of Idaho.	
Mountainhome.	Elmore.	3,150	7	39.8		60	8	13	26	37	0.79		0.42	0	4	13	7	10		Mrs. Ellen Manion.	
Murtaugh.	Twin Falls.		6	37.8		65	d	10	14	27	41	0.44		T.	3				w.	J. E. Steinhour.	
New Meadows.	Adams.	3,950	8																	E. G. Dunn.	
Nezperce.	Lewis.	3,082	3	40.2		60	13	20	27	32	0.95		0.44	0	5	12	3	15		P. Mitchell.	
Oakley.	Cassia.	4,700	19	39.8	+ 1.1	62	9	20	26	32	0.85	+ 0.04	0.40	T.	3	7	20	3		John Adams.	
O'Hara Bar.	Idaho.	1,557	2	37.8		52	k	9	27	25	2.94			T.						J. D. Agnew.	
Orofino.	Clearwater.	1,027	8	39.2		55	10	22	1	32	2.86		0.70	2.2	15	3	20	7		Geo. Alteneder.	
Payette.	Canyon.	2,159	22	41.1	+ 0.5	64	9	18	29	28	1.50	+ 0.29	0.56	T.	9	8	6	16	n.	E. F. Allen.	
Pierson.	Custer.	7,000	2	25.8		54	1	25	46	0.61			0.29	6.0	3	13	0	17	s.	David P. Clarke.	
Pine.	Elmore.	4,100	3																	Mrs. Jennie Potter.	
Pleasant Valley.	Ada.	3,000	5	40.2		64	9	16	26	30	1.13		0.45	0	5	15	6	9	se.	C. E. Friedrich.	
Pocatello.	Bannock.	4,483	13	39.9	+ 3.6	62	9	14	27	32	0.95	+ 0.40	0.36	T.	7	7	13	10	se.	U. S. Weather Bureau.	
Pocatello Nursery.	do.	5,396	5			57	j	8											sw.	Mrs. Fannie E. Say.	
Poplar.	Bonneville.	5,500	2	34.0		55	18	6	27	37	0.96		0.31	4.0	8	14	7	9	sw.	C. M. Lawrence.	
Porthill.	Bonner.	1,665	23	35.8	+ 2.2	51	19	16	27	22	3.59	+ 0.28	0.72	3.0	15	6	4	20		H. A. French.	
Powers Ranch.	Boise.	4,300	3								1.19		0.32	1.0	5	19	0	11		Mrs. Mary French.	
Priest River Exp. Station No. 1.	Bonner.	2,500	1	34.7		50	22	17	27	22	5.18		0.88	3.3	14	2	6	22	s.	D. R. Brewster.	
Priest River Exp. Station No. 2.	do.		1	35.4		55	22	16	27	28	5.13		0.82	3.3	13	2	6	22	e.	Do.	
Priest River Exp. Station No. 3.	do.		1	33.3		55	22	10	26	30	5.83		0.85	3.3	13	2	6	22	e.	Do.	
Pyle Creek.	Boise.	3,100	3								2.33		1.11	0.6	10	14	3	13	w.	P. V. Smith.	
Rattlesnake Creek.	Elmore.	4,000	3								1.96		0.90	T.	8	13	4	13		Richard M. Green.	
Richfield.	Lincoln.	4,306	3	37.0		61	9	13	29	34	0.79		0.69	0	2	10	18	2	ne.	Idaho Irrigation Co.	
Roseberry.	Boise.	4,872	1	31.5		52	9	4	26	33						5	11	14	s.	Rev. T. P. Graham.	
Roseworth.	Twin Falls.	4,650									0.90		0.36	0.2	7	4	18	8	nw.	D. B. Hartwell.	
Rupert.	Lincoln.	4,204	6	38.6		64	9	15	26	43	1.55		0.62	0.2	7	18	4	8	w.	Will Parry.	
St. Anthony.	Fremont.	4,968																		Heber C. Sharp.	
St. Maries.	Kootenai.	2,263	15	38.4	- 0.2	52	9	21	27	24	3.59	- 0.71	0.76	0.5	14	1	7	22	ne.	J. S. Turnbull.	
Salmon.	Lemhi.	4,040	7	35.8		60	9	9	27	32	0.23		0.13	T.	3	10	16	4	nw.	Z. T. Vincent, jr.	
Sandpoint.	Bonner.	2,086	2	39.0		64	15	18	28	35	5.06		0.70	1.0	12	6	5	19	s.	S. M. Moore.	
Sheep Hill.	Boise.	5,000	3								2.43		1.40	5.0	11					Clifford M. Gardner.	
Shoshone.	Lincoln.	3,968	4	39.2		63	a	9	18	24	30	0.72	0.61	T.	4	7	22	1	e.	Zell Truman.	
Silver City.	Owyhee.	6,280	5								1.71		0.77		10				sw.	Russell Stoddard.	
Smith Prairie.	Elmore.	5,200	3								1.92		0.77	4.6	11	10	8	12	sw.	Wm. W. Newell.	
Soldier Creek.	Blaine.	5,755	2	34.1		50	13	13	27	31	1.79		1.03		7	13	5	12	nw.	J. E. Minear.	
Spirit Lake.	Kootenai.	2,560	2																	M. C. Krause.	
Springfield.	Bingham.	4,420	4	36.2		64	9	11	26	39	0.55		0.20	T.	6	8	17	5	sw.	Mrs. W. A. Edwards.	
Spring Hill.	Ada.	3,607		42.4		63	9	20	28	31	1.30		0.56	0.8	7	8	8	14	se.	Ray G. Lyons.	
Sugar.	Fremont.	4,832	5	32.8		61	9	10	27	36	0.39		0.31	3.0	3	19	1	10	sw.	Utah-Idaho Sugar Co.	
Sunnyside.	Elmore.	3,500	3	44.1		68	11	16	26	42	0.72		0.40	0	7				se.	Col. M. W. Wood.	
Tripod Mountain.	Boise.	4,300	3																	Mrs. Verna Paddock.	
Twin Falls.	Twin Falls.	3,825	7	40.7		67	22	18	27	46	1.10		0.64	0	4	7	20	3	sw.	J. A. Waters.	
Vernon.	Fremont.	5,050	14	34.6	+ 1.2	61	14	10	27	37	0.96	- 0.30	0.25	1.0	6	17	7	6	sw.	A. M. Slatery.	
Wallace.	Shoshone.	2,728	5	37.0		55	18	20	26	21	5.75		0.80	0	15				e.	U. S. Weather Bureau.	
Weiser.	Washington.	2,114		41.0		68	9	18	26	30	1.41		0.38	0	8	7	7	16	s.	J. W. Lapish.	
Wendell.	Lincoln.	3,400	4	40.2		65	9	16	26	32	1.18		0.85	0	4	21	8	1	w.	Chas. L. Dingler.	
Washington.																					
Aberdeen.	Chehalis.	162	21	44.7	- 1.0	59	16	27	28	19	12.65	- 2.17	1.49	0	24	0	26	4	w.	Carl S. Weatherwax.	
Anacortes.	Skagit.	60	18	45.8		65	16	31	26	27	3.78	- 0.74	0.79	0	21	3	19	8		Douglas Allmond.	
Anatone.	Asotin.			39.8		59	15	17	27	29	1.99		0.45	T.	9	9	16	5	sw.	W. A. Hamilton.	
Baker.	Skagit.	390	6	41.0		51	19	30	26	14	9.71		1.28	0.9	19	7	1	22		Robt. M. White.	
Bellingham.	Whatcom.	60	17	45.8	- 0.8	61	17	26	26	23	4.19	- 0.50	1.05	0	15	6	3	21		S. B. Mayhew.	
Bellingham (near).	do.	107	1	43.9		60	17	25	25	23	5.27		0.90	0	19	3	11	16		U. S. Bureau Plant Industry	
Blaine.	do.	57	15	44.5	+ 3.4	58	12	30	14	20	6.40	- 0.46	1.22	0	25	0	12	18	se.	I. M. Scott.	
Blewett.	Chelan.	2,200	3								2.29		0.90	17.0	7					John Burmeister.	
Bremerton.	Kitsap.	30	14								7.76		0.90	0	17					U. S. Navy Yard.	
Brewster.	Okanogan.	1,620	2	37.4		54	22	22	27	19	1.57		0.59	0.2	12	7	8	15	sw.	Mrs. H. F. Bertram.	
Bumping Lake.	Yakima.	3,400	1	34.9		52	22	17	26	30	6.57		1.20	34.0	16	8	3	19			
Cedar River.	King.	535	5								9.90		1.05	0	21	4	6	20		Geo. Landsburg.	
Centralia.	Lewis.	212	19	45.0	- 0.2	60	15	25	28	17	7.34	- 1.51	1.68	0	17	3	9	18	s.	I. S. Turner.	
Cle Elum.	Kittitas.	1,930	13	37.2	- 0.3	59	23	18	27	31	3.01	- 1.39	0.46	2.0	13	7	12	11	ne.	J. A. Balmer.	
Clearbrook.	Whatcom.	140	9	44.0		62	17	28	24	21	9.80		1.03	0	20	1	7	22	ne.	Geo. Gibbs.	
Colfax.	Whitman.	2,300	23	41.5	+ 2.4	60	17	18	27	28	2.45	- 0.84	0.63	0	9	9	0	21		I. B. Doolittle.	
Colville.</																					



TABLE 1.—Climatological data for November 1912. District No. 12—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Washington—Contd.																				
Goldendale.	Klickitat.	1,600	6	41.8		58	22	24	27	26	2.52	- 0.56	0.32	0	12	2	19	9	w. e.	Klickitat Co. Abstract Co.
Granite Falls.	Snohomish.	397	9								7.05		0.90	0	24	2	7	21	e.	C. H. Clever.
Grays River.	Wahkiakum.																			Frank Kuehn.
Guler.	Klickitat.	2,200	3											0		9	5	16		T. Lee Bash.
Hanford.	Benton.			42.6		65	22	21	30	31	1.19		0.56	0	6	5	15	10	sw.	Dr. A. V. Marion.
Hatton.	Adams.	1,100	7	40.8		60	22	24	30	27	1.36		0.39	T.	10	4	5	21	sw.	Mrs. S. J. Hill.
Huntsville.	Columbia.	1,400	4								1.42		0.48	0	6					Mrs. Theo. Wheeler.
Irene Mountain.	Okanogan.	3,015	3								2.07		1.05	4.5	9	3	10	17	se.	R. E. Reed.
Kennewick.	Benton.	368	17	43.1	+ 1.1	67	22	15	27	46	1.08	+ 0.15	0.42	0	6	9	12	9	s.	A. O. Jeffries.
Kent.	King.	53		44.8		63	1	27	26	24	8.30		1.11	0	20	3	6	21	s.	H. H. Cole.
Kettle Falls.	Stevens.	1,265	3	37.4		55	16†	20	26†	24	3.34		0.72	1.0	14	6	11	13		J. A. Ulsh.
Kiona.	Benton.	430	7																	Joseph Brothers.
Kosmos.	Lewis.	775	6	43.2		62	16	26	26	29	7.22		1.24	0	19	0	23	7	ne.	M. E. Schreck.
La Center.	Clarke.	250	15	43.1	- 0.3	59	12	25	26†	30	6.46	- 2.97	1.04	0	18	5	11	14	s.	U. S. Reclamation Service.
La Crosse.	Whitman.	1,400	3	42.0		64	9	25	25	26	2.19		0.46	T.	11	6	8	16	e.	Do.
Lake Clealum.	Kittitas.	2,171	3								5.04		0.72	8.5	12	0	0	30	nw.	W. H. Van Meter.
Lake Kachess.	do.	2,235	4	37.0		53	23	23	27	23	5.60		1.45	25.0	14	5	12	13	w.	Mrs. Minnie E. Strout.
Lake Keechelus.	do.	2,479	4								9.01		1.36	21.7	19	2	7	21	e.	Mrs. J. S. Myers.
Lakeside.	Chelan.	1,116	21	40.2	+ 2.2	58	22	25	27	20	1.49	- 0.42	0.55	0.5	10	1	18	11	e.	U. S. Engineer Corps.
Laurel.	Klickitat.	1,900	3								7.53		1.28	0	15	4	22	4	w.	L. F. McConihe.
Laurier.	Ferry.	1,644	2	34.7		50	19†	16	27	25	2.55		0.42	2.5	16	4	5	21	s.	Mrs. Mary McCumber.
Lone Tree.	Chehalis.	14	3	49.06		69	23	38†	14†	29†	13.34		1.68	0	24	0	11	19	s.	G. H. Mottinger.
Longmires Springs.	Pierce.	2,800	3																	Wm. M. Dorr.
Lost Creek.	Okanogan.	3,125	3																	H. B. Scudder.
McConihe.	Grant.	1,072	1	39.8		56	5	23	26†	22	0.90		0.40	T.	11	10	4	16	n.	Chas. M. Talmadge.
McCumbers Ranch.	Yakima.	2,182	3								6.40		1.15	T.	13	6	14	10	sw.	Steve Nagy.
Moses Lake.	Grant.	1,070	1																	U. S. Weather Bureau.
Mottinger.	Benton.	307	12	46.0	+ 1.9	66	22	27	27	29	0.79	- 0.34	0.30	0	6	16	9	5	e.	W. F. Case.
Mount Pleasant.	Challam.	500	1	41.5		61	17	30	28	26	5.20		1.10	T.	19	0	14	16		Ruth J. Shepard.
Moxee.	Yakima.	1,000	20	40.2	+ 1.0	66	22	18	28†	38	1.04	- 0.18	0.40	0	10	10	13	7		Albert Bender.
Newport.	Stevens.	2,400	2	35.6		53	22	19	27	23	5.49		0.87	1.0	14	3	12	15	e.	H. W. Riecke.
Nighthawk.	Okanogan.	3,050	3											9.9						Cecil S. Willis.
North Head.	Pacific.	211	10	48.0	+ 0.3	57	16	40	25	11	9.79	+ 3.46	1.54	0	21	2	5	23	s.	M. O. Connor.
Northport.	Stevens.	1,350	13	35.4		54	19	19	25†	28	3.13	+ 0.73	0.56	3.0	16	12	6	12		Saint John Umbrite.
North Sundale.	Klickitat.		3	43.0		61	22	22	29	28	1.27		0.40	0	11					M. C. Jackman.
North Yakima.	Yakima.	1,070	3	40.1		62	22	20	27†	31	1.04		0.46	0	8	7	9	14	s.	Samuel Gruell, sr.
Odesa.	Lincoln.	1,540	9	40.0		66	22	19	26	24	2.29		0.43	0	13	4	22	4	sw.	Peter McClung.
Olga.	San Juan.	50	22	45.8	+ 1.4	58	13	33	28	16	5.17	+ 0.21	0.74	0	18	3	7	20	se.	U. S. Weather Bureau.
Olympia.	Thurston.	45	34	44.8	+ 0.4	60	22	28	28	23	9.98	+ 1.38	1.50	0	20	1	9	20	sw.	Geo. B. Stocking.
Omak.	Okanogan.	850	3	38.6		57	19	19	27†	31	1.69		0.69	0	8	11	5	14	s.	J. W. Nicol.
Oroville.	do.	922	2	40.6		55	2†	21	27	26	2.80		0.70	2.0	11	12	5	13	s.	Agent N. P. Ry.
Peola.	Garfield.	5,000	3								2.29		0.52	5.6	14	13	6	11	sw.	R. R. Couger.
Pomeroy.	do.	1,500	20	43.2a	+ 1.2	64	9†	24	26	31a	1.52	- 1.05	0.44	T.	10	0	12	18	w.	Hans Mumm.
Port Crescent.	Challam.	259	17	42.3	0.0	56	20	30	28	22	6.07	- 1.38	1.34	0	22	0	4	26	s.	Mrs. Adella Russell.
Port Townsend.	Jefferson.	80	22	45.6	+ 0.5	58	1	34	29	16	2.17	- 0.61	0.60	0	14	5	0	25	se.	U. S. Weather Bureau.
Prosser.	Benton.	661	3	43.8		68	22	23	27†	28				0	14	10	12	8	w.	F. Plummer.
Pullman.	Whitman.	2,550	20																	E. L. Capps.
Queets River.	Chehalis.	16	1	44.9		55	16†	31	24	16	16.48		2.81	0	27	5	3	22	s.*	C. A. Bullard.
Quinalt.	do.	300	5	43.9		56	1	30	28†	21	24.08		2.30	0	25	3	12	15	w.	A. V. Higley.
Republic.	Ferry.	2,628	12	34.0	+ 0.5	50	19	12	26	23	1.16		0.25	2.0	14	7	4	19	nw.	Geo. B. Stocking.
Rex Creek.	Chelan.	1,135	5	40.8		56	22	28	27	21	2.55		0.97	0	10	1	10	16	nw.	J. W. Nicol.
Ritzville.	Adams.	1,825	13								2.29	+ 1.00	0.60	0	10					Agent N. P. Ry.
Robertsville.	Klickitat.			37.5		55	22	20	27	26	5.65		0.90	T.	15	6	18	6		R. R. Couger.
Rock Lake.	Whitman.	1,910	6																	Hans Mumm.
Rosalia.	do.	2,425	20	38.7	+ 0.8	57	18	20	26†	21	2.58	- 0.58	0.44	0	15	2	8	20	S.	Mrs. Adella Russell.
Russells Ranch.	Yakima.	2,870	3								4.45		0.65	14.0	13	11	3	16	w.	U. S. Weather Bureau.
Seattle.	King.	125	21	46.2	+ 1.7	61	1	35	26	16	6.82	+ 0.96	1.50	0	21	0	6	24	se.	Mrs. H. L. Devin.
Sedro Woolley.	Skagit.	38	15	44.8	+ 0.6	62	17	27	26†	23	5.45	- 1.77	0.81	0	21	5	7	18		C. E. Comstock.
Sixprong.	Klickitat.	1,240	5	43.7		64	22	24	27	26	1.22		0.40	0	11	10	6	14	sw.	James Bylling.
Skagit Power Dam.	Whatcom.	510	2																	O. N. Wiswell.
Snohomish.	Snohomish.	55	18	45.2	+ 0.5	67	1	28	26	26	6.26	- 0.25	0.85	0	15	13	0	17	se.	G. R. Westcot.
Snoqualmie Falls.	King.	667	13	44.6		58	16	50	25†	22	9.88	+ 0.62	1.32	0	23	8	0	22		George M. Snyder.
Snoqualmie Pass.	do.	3,000	3											71.0						Mrs. Winifred Buckingham.
Snyders Ranch.	Okanogan.	2,200	3	33.2		53	22†	12	27	27	1.54		0.45	8.0	10	6	10	14	e.	U. S. Weather Bureau.
South Bend.	Pacific.	140	17	45.2	- 2.5	61	16	27	28	21	16.07	+ 1.95	1.68	0	20	7	9	14	w.	University of Washington.
Spokane.	Spokane.	1,943	31	40.2	+ 2.9	58	18	21	26	21	2.29	- 0.01	0.56	0.3	14	1	6	23	sw.	Chas. W. Gunn.
State University.	King.	170	3	46.2		58	1	36	26	12	6.68		0.88	0	18	3	4	23	s.	H. E. Thompson.
Stokes Ranch.	Okanogan.	2,670	3								1.91		0.55	16.0	12	3	18	9	sw.	U. S. Reclamation Service.
Sumner.	Pierce.	77	4	45.0		62	12†	26	25	29	8.36		1.28	0	23	7	6	17	s.	U. S. Weather Bureau.
Sunnyside.																				







TABLE 1.—Climatological data for November, 1912. District No. 12—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Oregon—Continued.																				
Wallace Orchard.....	Polk.....	170	3	45.6	.....	60	12	27	28	24	6.42	.....	1.38	0	16	0	11	19	.....	Chas. A. Park.
Wallowa.....	Wallowa.....	2,935	9	36.6	.....	63	9	16	26	32	1.72	.....	0.35	0.6	18	8	3	19	se.	L. J. Coverstone.
Wamic.....	Wasco.....	1,500	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. J. Swift.
Warm Springs.....	Crook.....	1,500	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Claude C. Covey.
Wasco.....	Sherman.....	1,263	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. R. Howell.
Westfall.....	Malheur.....	3,000	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. M. Gilliam.
Weston.....	Umatilla.....	1,800	20	42.4	+ 1.5	63	18†	23	24	28	2.03	- 1.15	0.50	0	7	0	2	28	se.	M. A. Baker.
Williams.....	Josephine.....	1,368	20	44.7	- 0.4	69	8	25	21	34	4.26	- 1.91	1.30	0	12	7	6	17	n.	Francis J. Le Roy.
Yonah.....	Klamath.....	4,146	5	38.7	.....	59	26	10	28	42	2.56	.....	0.83	1.0	7	4	15	11	sw.	Jacob Rueck.

a, b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

\*\* Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.



TABLE 2.—Daily precipitation for November, 1912. District No. 12, Columbia Valley.

[illegible]



TABLE 2.—Daily precipitation for November, 1912. District No. 12—Continued.

Stations.	Watershed.	Day of month.																														Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Idaho—Continued.																																
Mesa II	Weiser			.16	.26	.96	T.	T.		T.	T.				T.	.18					.34											1.90
Middle Fork	Clearwater		.04	.12	.25	.05	.40	.35	.03	.45	.35	.04	.30		.06	.05					.40											2.89
Milner	Snake			.30	.13		.75																								.08	
Moscow	Palouse			.20	.55	.30	.34	.12	.04	.12	.26	.02	.30	.02	.25	.02													.01		.05	
Mountainhome	Snake				.14	.02	.42														.21										T.	
Murtaugh II	do.			*	.27				T.				.17								T.										T.	
New Meadows	Salmon																															
Nez Perce	Clearwater		.44					.19					.08				.12				.12											
Oakley	Snake				.30		.15					.40																			T.	
O'Hara Bar	Clearwater																															
Orofino	do.			.70	.20	.10	.34	.03	.02	.38	.02	.01	.45		.09	.02					.20								.01	.29	2.86	
Payette	Payette			.25	.01	.39	.56	.01	T.				T.		.07	.06					.09	.06									T.	
Pierson	Salmon						.29	.18																							.14	
Pine	Boise																															
Pleasant Valley	do.			.29		.14	.45														.05	.20									1.13	
Pocatello	Port Neuf		T.	.13	.23		.14					.11					.04				.17										.13	
Pocatello Nursery	do.			.23	.12		.31	.25									.32	.02			.18											
Poplar	Snake			.08	.14		.08	.14					.05	.10			.06														.31	
Porthill	Kootenai			.05		.28	.35	.09	.72	.35	.68	.30	.23	.25	.10					.03	.06								.05	.10	3.59	
Powers Ranch	Boise			.30	T.	.16															.31									.10	1.19	
Priest River Exp.	Pend Oreille	T.		.30	.22	.66	.56	.11	.44	.57	.88	.20	.55	.34	.25	.01	T.	T.	T.	T.	T.	T.								T.	.09	
Station No. 1	do.																															
Priest River Exp.	do.	T.	T.	.26	.20	.72	.57	.09	.45	.57	.82	.25	.60	.31	.21	T.	T.	T.	T.	T.	T.									T.	.08	
Station No. 2	do.																															
Priest River Exp.	do.	T.	T.	.30	.25	.85	.61	.11	.82	.55	.82	.26	.64	.30	.22	T.	T.	T.	T.	T.	T.									T.	.10	
Station No. 3	do.																															
Pyle Creek	Payette			.10	.10	.20	1.11	.03					.11		.11	.34					.15										.08	
Rattlesnake Creek	Boise			.08	.19	.15	.90		T.							.21	.18				.18										.07	
Richfield	Wood-Malad						.69	.10	T.																							
Roseberry	Payette																															
Roseworth	Snake			.07	.02		.34		.01		.36										.08										.02	
Rupert	do.	T.		.39	.10		.62	.01			.29										.01										.11	
St. Anthony II	do.																															
St. Maries	St. Joe		.04	.17	.32	.76	.40	.14	.05	.20	.37	.10	.60		.39		.09													.02	.03	
Salmon	Salmon						.13	.01																							T.	
Sandpoint	Pend Oreille			.30	.15	.52	.62		.70	.55	.50	.60	.65	.12	.30																.05	
Sheep Hill	Boise			.21	.06	.30	.14	.02	.03	T.																					.07	
Shoshone	Wood-Malad			.03	.03		.61				.05																					
Silver City	Owyhee			.03		.24	.14	.08	.77	.01	.05																					
Smith Prairie	Boise																				.16	.17									.21	
Soldier Creek	Wood-Malad																															
Spirit Lake	Pend Oreille			.12	.14	.14	1.03	.03	.28												.05											
Springfield	Snake					.05		.08	.11			.05																				
Spring Hill	Boise			.10		.08	.56																									
Sugar II	Snake		.03									.31																				
Sunnyside	do.			.01	.04	.40	.04				.01																					
Tripod Mountain	Payette																															
Twin Falls	Snake				.18	T.	.64		.04			.24																				
Vernon	do.			.20			.20				.25		.18	.80	.01	.43	.18				.05										.08	
Wallace	Coeur d'Alene			.22	.46	.58	.59	.49	.32	.73	.57										.13										.13	
Weiser	Weiser			.25	T.	.38	.30	T.	T.						.02		.04	.25			.07	.10										
Wendell	Wood-Malad			.05	.22	T.	.85														.06											
Washington.																																
Aberdeen	Coast		.06	.20	.62	1.32	.39	1.23	.69	1.15	.23	.21	1.08	1.49	.55	.59		.03	.98	.13	.35	.06		.08		.11				.98	.07	
Anacortes	Puget Sound			.13	.08	.03	.16	.22	.11	.17	.30	.22	.18	.79	.03				.13	.08	.44	.06	.03	.22	.07					.06	.27	
Anatone	Snake	T.			.37	.23	.45	.05	.05	.27	.02	.28																				
Baker	Puget Sound		T.	.27	.32	.33	.38	.41	.63	.63	.38	.62	.65	.77					.62	.87	1.28	.14	.09	.40					.81	.11		
Bellingham	do.			.07	.07	T.	T.	T.	.60	1.05	.23	.03	.10	.65					.11	.05	.40	T.							.13	.44		
Bellingham, near	do.			.07	.07		.33	.26	.34	.09	.50	.30	.22	.09	.90	T.			.15	.18	.70		.08	.36		.10			.02	.18		
Blaine	do.			.13	.08	.12	.44	.44	.26	.26	.25	.37	.30	.34	.56	.01	.02	T.	.10	.30	1.22	.04	.27	.29	.02	.19			.10	.28		
Blewett	Wenatchee						.14	.12	.18			.20	.25						.90													
Bremerton	Puget Sound				.66	.46	.34	.66	.78	.5																						



TABLE 2.—Daily precipitation for November, 1912. District No. 12—Continued.

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Washington—Contd.																																	
Klona.	Yakima.																																
Kosmos.	Columbia.	.10	.08	.41	.28	.34	1.24	.56	.26	.18	1.16	.67	.82	.04	.08				.26	.30	.12									T.	.18	.14	7.22
La Center.	do.	.12	.18	.02	.68	.20	.45	.09	1.00	.63	.06	1.02	1.04	.12	.30				.50	T.					.01					.03	.01	6.46	
La Crosse.	Palouse.	T.	.24	.38	.15	T.	.12	T.	.33	T.	.05	.32	T.	.46	.05					T.									.04	T.	.05	2.19	
Lake Clealum.	Yakima.	T.	T.	.43	.57	.41	.65	.43	.34	.62	.46	.72	.04	T.	.03				T.	T.	T.										T.	.34	5.04
Lake Kachess.	do.	T.	.02	.60	.59	.16	.52	.45	.29	.52	1.45	.50	.15						T.	.02	T.									.08	.25	5.60	
Lake Keechelus.	do.	.06	.12	.88	.53	.30	.73	.99	.33	.74	1.36	.60	.40					.17	.63	.21	.08		.01							.29	.58	9.01	
Lakeside.	Columbia.	.14	.02	1.10	.05	.03	T.	.55	.14	.31	.09	.06	T.		T.																	1.49	
Laurel.	do.	.01	.05	.52	1.03	.43	.68	.69	.71	.33	1.01	1.28	.18	.09	.30																.22	7.53	
Laurier.	Kettle.	.05	.28	.02	.23	.05	.05	.42	.20	.40	.26	.20	.14						.01	.05					.02					T.	.17	2.53	
Lone Tree.	Coast.	.15	.24	.74	.92	.76	.38	.41	1.27	.28	.07	1.51	1.68	.67	.03	.03	T.	.59	1.56	.98	.06	T.	.2	0.01	.10	T.	T.	T.	T.	.63	.10	13.34	
Longmires Springs.	Puget Sound.																																
Lost Creek.	Columbia.		.10		.10			.50	.10	.35	.20	.10								.20												1.65	
McConihe.	do.	.11			.05	.06		.05	.40		.03	.08	.02	.07	T.				T.											.02	.01	0.90	
McCumbers Ranch.	do.		.05	.30	.40	.70	.85	.60	.80	.35	1.15	.80	.10	.10	.20																	6.40	
Moses Lake.	do.																																
Mottinger.	do.		.11		.07	.05			.30			T.			.19	.07																	0.79
Mount Pleasant.	Coast.	T.	T.	.05	.04	.15	.60	.50	.25	.17	.39	.37	1.10	.01					.35	.30	.50	.02	T.	.16		.05				T.	.12	.07	5.20
Moxee.	Yakima.	.02			.03	.13	.02	.17	.40	.11	.02	.05	T.	.09																			1.04
Newport.	Pend Oreille.	.14	.30	.43	.71	.47	.09	.87	.62	.45	.32	.55	.32	.20																	T.	.02	5.49
North Head.	Coast.	.44	.63	.61	.95	.06	.19	.23	1.08	.19	.19	.54	1.16	.34	.13	.07		1.08	1.52	.04									.04	.25	.05	9.79	
Northport.	Columbia.	.29	.15	.24	.21	.14	.16	.56	.33	.05	.30	.26	.21					.05	.03										.06	.18		3.13	
North Yakima.	Yakima.	.01					.12	T.	.17	.46	.06	.03	.05	T.	.14																	1.04	
North Sundale.	Columbia.	.07			.06	.03	.11	.04	.40		.02	.17	.06	.14	.17																	1.27	
Odessa.	do.	.30	.07	.20	.16	.08	.02	.14	.43	.02	.19	.15	.16	.37																		2.29	
Olga.	Puget Sound.			.09	.14	.32	.35	.57	.31	.15	.33	.11	.61						.12	.08	.74	.31	.35		.11					T.	.33	.15	5.17
Olympia.	do.	T.	.20	.14	.75	.35	.45	.52	1.50	.45	1.10	.72	.86	.54	.10	.08		.23	.91	.59	.02									T.	.10	.37	9.98
Omak.	Okanogan.	.20	.03	T.	.12	T.		.69	T.	.23	.17	.19	T.						.06													1.69	
Oroville.	do.	.30			.20		.20	.70	.20	.30	.30	.10	.20						.20												.10	2.80	
Peola.	Snake.		.35	.10	.10	.52	.21	T.	.24	.19	.09	.15			.18	.01															.01	.13	2.29
Pomeroy.	do.		.30	T.	T.	.07			.10	.05	.05	.44	.16	.25	.05																T.	.05	1.52
Port Crescent.	Coast.	.02	.10	.03	.08	.03	.64	.38	.24	.23	.13	.36	1.34	.02			T.	.44	.93	.25	.13	.13			.09				.06		.42	.02	6.07
Port Townsend.	Puget Sound.				T.		.07	.12	.60	.42	.04	.06	.36	.06	T.			.06	T.	.15	T.			.05		.04					.06	.08	2.17
Fullman.	Palouse.																																
Queets River.	Coast.	.01	.31	.66	.84	.77	.47	.70	.54	.36	.68	2.81	.80	.87	.04	.08	T.	.73	1.35	.91	.41	.02	2.02	.02	.13	T.			.02	.01	.75	.17	16.48
Quinalt.	do.	1.10	.46	2.00	1.60	1.40	.90	.25	1.10	.65	1.90	2.00	1.80	.04	T.		.63	2.10	1.52	.60	.05	2.30	.05	.15	.02					1.00	.42	24.08	
Republie.	Kettle.	.12	.07	.02	.02	.02	.02	.21	.08	.25	.05	.15	.09						.02												T.	.04	1.16
Rex Creek.	Columbia.	.33	.06	.06	.17	.30	.30	.97		.16	.18							T.	.02													2.55	
Ritzville.	do.	.60	.05		.02	.21		.13	.40		.14	.24	.49																	.01		2.29	
Robertsville.	do.	T.	.42	.42	.46	.62	.35	.73	.25	.75	.90	.17	.32	.04				T.	.07	.03										.12		5.65	
Rock Lake.	Palouse.																																
Rosalia.	do.	.05	.20	.36	.44	.15	.06	.05	.38	.05	.26	.26	.01	.28																	.02	.01	2.58
Russells Ranch.	Yakima.	T.	.08		.24	.16	.24	.65	.60	.44	.54	.60	.50	.11		.09		.52	1.39	.13	.01	.01								T.	T.	.20	4.45
Seattle.	Puget Sound.	.03	.12	.08	.34	.09	.72	.69	.81	.29	.30	.30	.48	.17	.09				.31	.23	.66	.05		.26	.02					T.	.24	.01	6.82
Sedro Woolley.	do.	.31	.05	.12	.05	.40	.10	.28	.30	.25	.05	.07	.81					.31	.23	.66	.05									.07	.70	5.43	
Sixprong.	Columbia.	.05	.05		.07	.02		.08	.36		.07	.04	.03	.40									.26	.02		.16					.25	1.22	
Skagit Power Dam.	Puget Sound.																																
Snohomish.	do.	.11	.20	.32	.20	.31	.35	.65	.85	.25	.35			.70				.40	.75	.60											.22	6.26	
Snoqualmie Falls.	do.	.20	.11	.40	.52	.74	.52	1.32	.71	.63	.53	.42	.98	.02	.05			.39	1.03	.81	.01	T.	.05		.04	.01			T.	T.	.11	.28	9.88
Snoqualmie Pass.	do.																																
Snyders Ranch.	Columbia.	T.			.30	T.	.07	.45	.20	.05	.18	.10	.04					T.	.05	T.			.10								T.	.45	1.54
South Bend.	Coast.	.15	.51	1.52	.50	.90	1.17	1.28	.80	.35	1.40	1.09	1.55		.16			.88	1.68	.83	.09								.14	T.	.45	.65	16.07
Spokane.	Spokane.	.10	.13	.28	.03	.22	T.	.18	.38	.11	.23	.36	.13	.11																.02	T.	.01	2.29
State University.	Puget Sound.	.10	.10	.15	.30	.40	.88	.57	.82	.60	.14	.51	.25	.14	.07			T.	.70	.70	T.									.07	.18	6.68	
Stokes Ranch.	Columbia.	.10			.25			.55	.21	.18	.20	.18	.02					.07	.54	1.04			.02		.07	T.		.03		.05	.03	.18	1.91
Summer.	Puget Sound.	.02	.21	.09	.35	.23	.40	.54	1.00	.55	.73	.24	.39	.65	.05	.08		.54	.28	.65												8.36	
Sunnyside.	Yakima.	.06	.02	T.	.06	.01	.03	.03	.49	T.	.03	.07	.07	.09	T.			.69	1.43	.06	T.	T.	.07	T.							.19	.01	0.96
Tacoma.	Puget Sound.	.08	.15	.07	.51	.13	.61	.58	.93	.23	.45	.45	.63	.48	.14			.69	1.43	.06	T.	T.	.07	T.						T.	.38	.01	11.43
Tatooch Island.	Coast.	.18	.10	.58	.78	.20	.71	.73	.03	.73	.43	.83	1.18		.06		.02	.53	.84	.33	1.38	.67	.49	.22					.02				2.27
Tieton.	Yakima.	T.	.14	.11	T.	.02	.02		T.	.18	.03	T.	.02	T.	.27																T.		0.79
Touchet.	Columbia.		.73	.51	.21	1.00	.05	.05	.64	.41	.05	.52		.33	.10																	.46	5.18
Touchet Ridge.	do.			.04			.09	.28	.30	.17	.20	.12			.02																		1.24
Trinidad.	do.																																
Vancouver.	do.	.26	.16	.36	.11	.																											



TABLE 2.—Daily precipitation for November, 1912. District No. 12—Continued.

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Oregon—Continued.																																	
Buena Vista	Snake.					.04														.01												0.05	
Burns.	SE. drainage.	.05	.07	.18	.03	.85	.04	.03				T.		.11	.09	T.				.21										T.		1.66	
Burns Mill	do.		.20	.37		.30	.61	.08	.04					T.	.06	.52	.03		.25													1.85	
Butte Falls	Rogue.			.15	.04	.55	1.02	.09	T.	1.14	.35									.68	.03			T.								4.79	
California Gulch.	Umatilla.		.08							.08	.32				.41	.11			.22													1.22	
Canyon City	John Day.																																
Cascade Locks.	Columbia.	.18	.25	1.03	.82	.61	.67	.78	.93	.86	1.15	1.83	.55	.24	.39					.45	T.	.08								.12	.46	11.40	
Cascadia	Willamette.	.27	.80	.16	.27	1.33	.31	.37	.82	.11	.21	.79	.86	.15						.46	.08									.24	.34	7.57	
Cazadero.	do.	.26	.15	.22	.26	.69	.28	.77	1.04	.11	.44	1.34	.42	.09	.24					.51	.03									.02	T.	1.10	6.97
Christmas Lake	SE. drainage.	T.	T.		T.	.23	T.			T.										.03	T.												0.41
Cliff.	do.		.15		.15	.21			.09						.30					.06													0.96
Columbia Mine	Snake.		.30	.10	.60	.20	.10	.08	T.				.20		T.	.09				T.											.20		1.87
Condon	John Day.																																
Coquille River Light-house.	Coast.	.18	.83	.26	.50	.60	.10	1.09	2.06	.08	.60	.79	1.96	.21						1.34	.03									.23		10.86	
Cornucopia.	Snake.		.02	.41	.01	1.80	1.03	.04	.48	.05		.08	.51		.34	.18				.51											T.		5.46
Corvallis	Willamette.	T.		.57	1.20	.37	.08	.13	.34	2.37		.47	1.55	.40	.10				1.02		.02										T.	.30	8.90
Cracker Creek	Snake.	T.	T.	T.	.03	.07	.03		.02	T.	T.									.02													0.22
Crescent.	Deschutes.	.02	T.	.04	.04	.33	.77	.07	.01	.54	T.	.05	.02	T.	.12	T.				.04													2.14
Dayville.	John Day.		.06							.04	.13									.23													0.59
Deadwood	Coast.	T.		1.19	1.05	.93	.71	.40	1.60	1.30	1.23	1.44	2.57	.70	.30	.34				1.17										.17	.41	15.51	
Diamond	SE. drainage.	T.		.40											.12					.08													0.50
Doraville.	Columbia.	T.	.06	.13	.33	.30	.58	.24	1.36	.56	.46	1.01	.53	.37	.02	.16			.01	.18	.40	.04	.02			.02				.08	.41	7.07	
Drain.	Umpqua.	.07	.10	.31	.23	.22	.83	.06	.43	.73	.22	.22	.75	.97	.07					.90											.07	.37	6.55
Dufur.	Columbia.		.01	.01	.04	.14	.14		.16	.23	.02	.06	.24	.15	.17	.13																	1.53
Duncan.	Umatilla.			.30		.60			.20	.35	.20	.60																					2.45
Echo.	do.		.15	T.		.02	.10			.20	.08		.05		.20	.10																	0.90
Ella.	Columbia.	T.		.08	.06		.04			.10	.25	T.	.17		.18	.18									.12								1.18
Embury.	SE. drainage.		.09	.01	.50	.92	.06		.02	.04	.12	.21	.02	T.					.03	.01	T.									.07			2.10
Eugene.	Willamette.	.09	.15	.25	.73	.15	.34	.94	.53	.51	.43	.19	1.22	.28	.37	.09				.27	.11												6.98
Fairview.	Coast.																																
Falls City.	Willamette.																																
Fir Glen.	Coast.	.07	.06	.27	.28	.93	.89	.07	.45	1.49	.47	.07	.27	.97	.20					1.44	.06									.13	.65	8.77	
Florence.	do.	.08		.87	1.84	.67	.39	.23	1.69	.78	.79	1.21	1.78	.86	.32	.30				1.28	.05									.14	.12		13.40
Forest Grove.	Willamette.																																
Fort Rock.	SE. drainage.					T.	.38	.02		.08				T.	T.					.06											T.		0.54
Galice.	Rogue.	.10	.07	.58	.15	1.00	.89	.07	.30	1.77	.43	.21	.51	1.14	.44					.91													8.85
Gardiner.	Umpqua.			.58	.95	.65	.30	1.52	.95	.85	.86	2.38	1.12	.28	.35					1.35	.05								.20	.25	.10		10.00
Gibbon.	Umatilla.	.30		.63		.54	.27		.50	.20	.05	.30		.45	.10					.20													3.54
Glencoe.	Columbia.			.10			.15			.33		.08	.30		.04																		1.00
Glendale.	Umpqua.	.07	.03	.12	.41	.06	.01	.39	.28	.30	T.	.06	.07	.18	T.					.60	.20												2.82
Glenora.	Coast.		2.95	2.45	.98	.86	1.12	2.76	.40	.95	3.03	1.90	1.14						55	2.00	.95									.85	.40		23.29
Gold Beach.	Rogue.	.10	.20	.80	.50	.70	.80	.10		1.50	.80	.10	.50	2.00	1.20					2.20													11.80
Golden Falls.	Coast.	.03	T.	1.17	.63	1.59	1.22	.34	.64	1.49	1.01	.64	1.61	1.40	.20	.11				1.87	.05			T.					.29	.63		14.92	
Grande Ronde.	do.																																
Grants Pass.	Rogue.	.16	.09	.16	T.	.73	.64	.04	.05	.72	.17	.04	.03	.55	.51				.01	.01	.01	.70		.01						.08		4.71	
Grass Valley.	John Day.			.67		.19		.12	.34			.14	.10	.18	.15	.02																	1.31
Greenhorn.	Snake.	.20	.22	.08	.55	.30	.11	.06	.08	.06	.04	.43		.20	.19					.25	.01									.21		2.99	
Gumboot.	do.		.15	T.	.26	.61	.08	.36	.20	.18	T.	.33		.30	.17					.44													3.18
Gurdane.	Columbia.			.02		.02							.02			.01				.02													0.11
Happy Home.	Umpqua.	.10	.24	1.04	1.10	2.64	1.12	.46	.66	3.84	1.40	.64	1.56	2.10	.80					2.04	1.80									.10	.70		22.34
Harbor.	Columbia.	.20		.68	1.25	1.80	1.20	.10	.80	1.95	.46	.08	.56	2.30	1.40	.06				1.60	.06									T.	.25		14.75
Hay Creek.	Deschutes.				.20	.12	.13	.04	.45			.14		.17						.03													1.32
Hazeldell.	Willamette.	T.	.22	.37	.10	.37	.20	.17	.69	.43	.21	.30	T.	.48					.65	.25										.43	T.	4.87	
Headworks.	do.	.30	.23	.67	.67	.77	.50	.85	.63	.13	.86	1.48	.70	.20	.50				.03	.55	.03									.09	.30		9.49
Heppner.	Columbia.	.07	.06	T.		.20	.02</																										



TABLE 2.—Daily precipitation for November, 1912. District No. 12—Continued.

Stations.	Watershed.	Day of month.																														Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Oregon—Continued.																																	
Ortley.....	Columbia.....	T.	.....	.....	.11	.19	.35	.35	.20	.45	.07	.14	.78	.09	.05	.29	.....	.....	.....	T.	.01	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.08
Owyhee.....	Owyhee.....	.....	.05	.....	.....	.23	.22	.....	.....	.....	.....	.....	.....	.....	.23	.....	.....	.....	.....	.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.90	
Paisley.....	S.E. drainage.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.08	
Parkdale.....	Columbia.....	.....	T.	T.	.18	.47	.35	T.	.38	.48	.18	.41	.75	.18	.14	.21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.07	.25	1.28	
Pendleton.....	Umatilla.....	.....	.01	.33	.02	.03	.13	.01	.....	.11	.08	.01	.10	T.	.20	.20	T.	.01	.04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.09	
Persist.....	Rogue.....	.04	.19	.08	.14	.56	.08	.20	.....	.74	.27	.04	.12	.09	.50	.....	.....	.....	.....	.74	.....	.....	.....	.....	.....	.....	.....	.....	.20	.20	1.47		
Pilot Rock.....	Umatilla.....	.....	T.	.27	.....	.02	.25	.05	T.	.18	.07	.....	.08	.....	.23	.12	.....	.....	.....	.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Pompeii.....	Columbia.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Portland.....	Willamette.....	.01	.36	.41	.25	.13	.15	.42	1.07	.53	.09	.60	.68	.29	.18	.....	.....	.....	.....	.27	.02	.....	.....	.....	.....	.....	.....	.....	.....	.11	.05	5.62	
Port Orford.....	Coast.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Post.....	Deschutes.....	.....	.....	T.	.....	.....	.07	.....	.....	.08	.....	.....	.....	.....	.12	.....	.....	.....	.....	.26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.02	0.55		
Power House.....	Columbia.....	.....	.16	.54	.02	.09	.13	.05	.66	.07	.04	.09	.....	.46	.16	.....	.....	.....	.....	.03	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.50	
Prairie City.....	John Day.....	.....	.01	.09	.....	.17	.10	.02	.....	.....	T.	T.	.02	.....	.02	.11	.....	.....	.....	.05	T.	.....	.....	.....	.....	.....	.....	.....	.....	.04	0.63		
Prineville.....	Deschutes.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Prospect.....	Rogue.....	.03	.03	.19	.08	.31	.87	.19	.01	.92	.37	.01	.03	.02	.55	.....	.....	.....	.....	.66	.....	.....	.....	.....	.....	.....	.....	.....	T.	.35	4.62		
Rager Creek.....	Deschutes.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Ramsey.....	Columbia.....	.....	.....	.....	.....	.07	.10	.09	.18	.30	.01	.06	.27	.08	.23	.12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.51	
Range.....	John Day.....	.....	T.	.15	.....	.30	.25	.....	.20	.....	.....	.15	.....	.....	.20	.....	.....	.....	.....	.35	.10	.....	.....	.....	.....	.....	.....	.....	.10	.....	1.80		
Ray Creek.....	Columbia.....	.....	.....	T.	.....	T.	.23	T.	T.	.27	.....	T.	.....	T.	.38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.88	
Redmond.....	Deschutes.....	.....	.....	.....	.....	.10	.05	.09	.02	.07	.04	.....	.02	.....	.08	.....	.....	.....	.....	.....	.08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.55	
Reston.....	Umpqua.....	.14	.05	.30	.27	1.10	.53	.05	.40	1.50	.44	.08	.34	1.02	.20	.....	.....	.....	.....	1.27	.02	.....	.....	.....	.....	.....	.....	.....	.11	.44	8.26		
Richland.....	Snake.....	.....	.....	T.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T.	.40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.40	
Riverdale.....	Deschutes.....	.06	.06	T.	T.	.....	.....	.20	.....	.....	.....	.04	.....	.....	.22	.....	.....	.....	.....	.09	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.01	0.68	
Riverside.....	Malheur.....	.....	T.	T.	.....	.30	.....	.....	.....	.....	.....	.....	.....	.....	.20	.....	.....	.....	.....	.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.65	
Rock Creek.....	Willamette.....	.....	.....	1.21	1.83	.75	.40	.64	1.60	1.25	.48	2.22	2.10	.34	.45	.....	.....	.....	.....	1.36	.....	.....	.....	.....	.....	.....	.....	.....	.47	.23	15.33		
Roseburg.....	Umpqua.....	.16	.07	.12	.02	.58	.17	.....	.51	.66	.13	.27	.07	1.31	.02	.....	.....	.....	.09	.80	.....	.....	.....	.....	.....	.....	.....	.....	.13	.05	5.16		
Rosland.....	Deschutes.....	.05	.07	.....	.04	.15	.61	.....	.08	.41	.....	.12	.05	.04	.18	.....	.....	.....	.....	.31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.23	
Salem.....	Willamette.....	T.	.17	.14	.37	.28	.09	.14	1.23	.50	.30	.20	1.01	.56	.14	.....	.....	.....	.....	.54	.....	.....	.....	.....	.....	.....	.....	.....	.02	.09	5.78		
Seneca.....	S.E. drainage.....	.....	.06	.09	.....	.10	.16	.....	.....	.....	.....	.....	T.	T.	.....	.....	.....	.....	.....	.03	.07	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.61	
Silver Lake.....	do.....	.....	.....	.50	.....	.....	.....	.....	.22	.....	.....	.....	.....	.....	.09	.....	.....	.07	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.88	
Siskiyou.....	Rogue.....	.....	.....	.....	.06	.86	1.59	.....	.59	.10	.16	.10	.10	.91	.....	.....	.....	.....	.....	.54	.04	.....	.....	.....	.....	.....	.....	.....	.04	5.09			
Sisters.....	Deschutes.....	.....	.....	.....	.04	.10	.38	.07	.30	.35	.05	.....	.....	.20	.....	.....	.....	.....	.....	.07	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.66	
Sparta.....	Snake.....	.....	.....	.....	.10	.20	T.	.02	.....	.....	.....	.....	T.	T.	.....	T.	.....	.....	.....	T.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.20	0.52		
Stafford.....	Willamette.....	.01	.41	.49	.52	.40	.13	.50	1.45	.46	.17	.39	1.20	.33	.18	.02	.....	.....	.01	.55	.01	.....	.....	.....	.....	.....	.....	.....	.03	.03	7.29		
Starkey.....	Grande Ronde.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Summit.....	Willamette.....	.....	.08	.82	.31	.40	.45	.30	1.88	.61	.57	.78	1.10	.58	.14	.09	.....	.....	.....	1.06	.....	.....	.....	.....	.....	.....	.....	.....	.18	.30	9.65		
Summit Prairie.....	Deschutes.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Susanville.....	John Day.....	.....	.10	T.	.10	.05	.10	.05	.10	.12	.....	.....	T.	.20	.....	.....	.....	.....	.....	.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.01	0.93		
Tamarack.....	do.....	.....	.05	.....	.....	T.	.52	.05	.03	.30	T.	.14	.08	.....	.28	.03	.....	.....	.....	.06	.....	.....	.....	.....	.....	.....	.....	.....	.02	.02	1.58		
Telocaset.....	Snake.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
The Dalles.....	Columbia.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tinroof.....	Umatilla.....	.....	T.	.20	.....	T.	T.	.01	.....	.20	.....	.20	.....	.50	T.	.....	.....	.....	.....	.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.31	
Toledo.....	Coast.....	.....	.....	.90	1.40	.45	.65	.....	2.10	.80	.....	.70	1.20	1.10	.50	.25	.....	.....	1.00	.....	.30	.....	.....	.....	.....	.....	.....	.....	.70	.....	12.05		
Trail.....	Rogue.....	.....	T.	.17	.03	.45	1.08	.04	.01	.57	.13	.19	.09	.16	.53	.....	.....	.....	.....	.58	.01	.....	.....	.....	.....	.....	.....	.....	.....	.14	4.18		
Trask.....	Coast.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Umatilla.....	Columbia.....	.....	.07	T.	.....	.02	.....	.....	T.	.33	.....	.03	.....	.25	.08	.....	.....	.....	.....	.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.78	
Union.....	Grande Ronde.....	.....	.....	.20	.....	.04	.....	.....	.....	.07	.01	.01	.03	.....	.....	.02	.....	.....	.....	.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.01	0.64		
Vale.....	Malheur.....	.....	.....	.21	.01	.34	.29	.....	.....	.....	.....	.....	.....	.....	.10	.07	.....	.....	.....	.03	.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.15	
Valley Falls.....	S.E. drainage.....	.....	.....	T.	.....	1.03	.58	.....	T.	T.	.....	.....	.....	.....	.....	.....	.....	.....	.23	.....	.....	.....	.....	1.10	.....	.....	.....	.....	.....	.....	.....	2.94	
Van.....	Malheur.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Vida.....	Willamette.....	.....	.23	.45	.60	.75	1.40	.85	.75	.70	.45	.63	1.30	.70	.20	.....	.....																



TABLE 3.—Maximum and minimum temperatures at selected stations for November, 1912. District No. 12, Columbia Valley.

Date.	Montana.						Afton, Wyo.	Idaho.																							
	Kallispell.		Missoula.		Boise.			Bonners Ferry.		Hot Spring.		Lewiston.		Mackay.		New Meadows.		Pocatello.		Salmon.		Shoshone.		Vernon.		Wallace.					
	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.				
1....	37	19	42	18	47	.....	53	30	48	20	55	32	48	29	40	14	.....	.....	49	25	45	15	48	26	45	17	42	25			
2....	34	26	38	22	45	.....	54	36	53	31	57	39	46	34	40	22	.....	.....	47	35	48	22	.....	.....	43	21	45	28			
3....	41	28	46	30	44	.....	50	39	42	30	60	43	45	37	38	21	.....	.....	46	35	48	26	48	34	40	31	39	34			
4....	43	32	39	29	41	.....	47	34	46	32	55	32	50	37	40	23	.....	.....	44	32	53	28	47	30	38	31	36	32			
5....	45	33	46	30	40	.....	47	42	44	35	54	33	53	43	42	17	.....	.....	47	31	52	28	48	25	40	23	43	33			
6....	50	34	44	35	40	.....	54	43	45	39	57	43	60	43	38	31	.....	.....	50	37	50	40	49	.....	38	30	46	35			
7....	42	35	40	32	45	.....	55	42	48	30	58	40	53	38	45	27	.....	.....	51	40	48	32	52	34	46	33	40	34			
8....	40	31	44	29	53	.....	66	45	48	37	62	42	50	42	42	26	.....	.....	60	42	54	31	58	37	50	31	46	32			
9....	49	35	60	38	58	.....	68	55	52	38	72	42	60	44	44	24	.....	.....	62	50	60	35	63	42	60	31	50	41			
10....	46	32	50	36	58	.....	56	35	47	40	65	42	55	40	46	26	.....	.....	58	37	53	42	56	39	54	31	46	33			
11....	43	36	50	33	44	.....	51	30	44	35	62	48	53	38	54	23	.....	.....	44	32	50	26	47	29	40	29	46	34			
12....	46	36	51	39	44	.....	58	47	47	34	60	48	53	43	42	22	.....	.....	48	33	58	34	54	28	45	26	45	38			
13....	58	34	56	33	53	.....	61	40	49	36	60	38	56	40	46	20	.....	.....	55	30	60	28	53	.....	50	29	53	34			
14....	42	34	42	30	51	.....	54	44	46	36	56	42	51	40	45	19	.....	.....	55	30	52	25	52	.....	61	24	40	34			
15....	40	30	41	30	44	.....	50	38	44	33	57	33	53	36	46	25	.....	.....	43	32	46	31	52	.....	50	34	41	28			
16....	40	31	47	36	35	.....	55	34	46	31	56	28	54	32	47	22	.....	.....	47	25	49	34	54	27	48	24	42	31			
17....	34	26	43	24	40	.....	59	32	46	36	60	38	51	36	46	20	.....	.....	55	27	48	20	55	29	49	24	44	30			
18....	44	28	46	24	51	.....	60	34	42	38	62	34	52	38	47	22	.....	.....	55	37	48	23	60	.....	50	25	55	34			
19....	46	30	46	26	51	.....	58	39	57	41	60	40	47	36	41	19	.....	.....	52	36	51	25	50	33	52	25	46	35			
20....	43	30	44	32	41	.....	45	33	51	38	58	36	54	31	39	27	.....	.....	39	31	48	23	44	.....	49	26	41	33			
21....	45	30	52	24	41	.....	48	28	48	36	52	24	57	38	35	13	.....	.....	46	25	43	16	53	23	39	21	50	33			
22....	55	41	59	35	40	.....	49	32	52	35	53	32	59	34	32	28	.....	.....	51	33	52	24	58	.....	45	18	54	40			
23....	49	29	47	25	39	.....	41	28	48	29	38	22	50	31	39	19	.....	.....	46	27	38	16	45	.....	44	18	43	31			
24....	48	25	47	23	44	.....	44	25	55	30	45	19	43	38	39	23	.....	.....	44	23	40	13	42	18	54	17	37	26			
25....	38	21	39	24	41	.....	45	26	43	22	45	22	47	28	40	16	.....	.....	44	23	40	14	45	18	35	22	38	24			
26....	35	18	39	20	38	.....	41	25	36	5	47	21	39	28	37	12	.....	.....	39	21	38	17	41	19	36	15	36	20			
27....	31	14	36	15	38	.....	43	27	33	4	50	25	44	30	40	9	.....	.....	46	14	36	9	47	26	38	10	38	20			
28....	41	26	40	24	40	.....	42	28	33	3	47	27	46	30	40	18	.....	.....	49	27	37	15	43	26	40	15	32	27			
29....	30	22	34	22	50	.....	45	24	38	4	50	26	39	30	39	8	.....	.....	51	25	40	12	48	22	43	15	38	22			
30....	34	25	39	24	41	.....	44	27	38	9	53	24	40	32	34	9	.....	.....	47	29	40	17	41	32	33	23	34	31			
Mns..	42.3	28.9	44.9	28.1	44.6	.....	51.4	34.7	45.8	28.9	55.5	33.8	50.3	35.9	41.4	20.2	.....	.....	49.0	30.8	47.5	24.0	50.1	28.4	45.2	24.0	42.9	31.1			

Washington.																												
Date.	Aberdeen.		Blaine.		Colville.		Kosmos.		Lakeside.		North Head.		North Yakima.		Odessa.		Port Crescent.		Seattle.		Sixprong.		Spokane.		Tacoma.		Tatoosh Island.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	50	43	54	42	42	20	58	46	47	33	52	47	52	29	47	30	52	39	61	46	53	31	47	32	58	47	53	46
2....	53	44	51	44	40	25	52	42	44	37	50	46	45	37	42	33	48	39	52	42	54	33	41	33	52	43	50	46
3....	50	38	51	40	41	32	48	39	43	37	49	41	48	36	43	32	48	31	50	42	52	32	41	37	50	40	47	42
4....	52	42	49	41	42	34	47	41	42	34	50	44	44	29	45	30	46	31	47	42	55	36	42	36	49	40	50	43
5....	52	43	50	42	45	35	50	38	45	37	52	46	56	30	51	36	50	39	52	45	59	43	47	41	53	45	50	45
6....	50	41	50	42	48	39	51	37	48	36	51	45	55	29	53	37	47	39	50	43	58	44	51	39	52	41	50	42
7....	50	39	48	40	49	36	45	41	53	38	51	46	55	33	47	35	48	39	51	40	56	44	49	37	52	40	51	42
8....	51	39	48	40	48	37	46	37	45	37	50	40	48	40	52	40	45	38	47	41	58	42	54	42	47	40	51	44
9....	45	37	45	38	47	35	50	38	42	34	52	41	46	37	50	37	43	32	46	37	55	41	52	39	43	40	47	40
10....	50	42	45	38	44	32	51	40	46	32	51	45	53	33	50	33	49	40	50	44	54	36	49	37	50	42	49	43
11....	52	44	48	40	44	35	44	38	41	36	50	46	47	36	47	35	50	34	50	42	50	34	45	37	50	44	51	44
12....	57	42	58	42	45	33	49	39	41	35	54	48	50	37	52	40	52	34	60	44	60	44	52	41	61	42	55	45
13....	55	37	57	45	52	39	50	42	48	39	52	44	55	42	54	45	50	31	50	43	55	45	52	43	50	41	52	44
14....	48	32	48	30	47	32	48	37	43	32	48	40	51	36	47	39	44	30	44	37	58	46	47	37	43	38	47	43
15....	54	41	54	35	46	25	55	33	45	38	53	46	50	36	44	35	47	39	53	41	57	43	44	33	52	36	52	45
16....	59	43	58	42	52	30	62	36	46	40	57	51	53	30	51	32	52	37	58	42	50	34	49	35	55	37	61	50
17....	50	41	58	38	42	25	53	33	44	35	55	48	43	28	49	31	51	41	54	44	46	30	49	35	55	39	58	46
18....	52	42	57	44	45	25	55	43	45	38	52	49	46	33	55	36	50	45	52	49	51	31	58	37	53	47	53	48
19....	54	38	54	44	53	36	49	33	56	37	52	46	53	39	50	39	53	35	51									



TABLE 3.—Maximum and minimum temperatures at selected stations for November, 1912. District No. 12—Continued.

Date.	Walla Walla, Wash.		Oregon.																					
			Ashland.		Baker.		Eugene. §§		Gold Beach.		Hermiston.		Marshfield.		Portland.		Prineville.		Roseburg.		The Dalles.		Vale.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	40	26	55	46	47	29	58	33	58	46	52	22			52	46			48	39			52	25
2.....	41	34	50	39	46	35	50	34	56	47	42	32			49	44			52	45			53	39
3.....	50	36	50	38	44	31	56	37	58	50	51	34			48	42			52	39			50	35
4.....	55	40	53	45	45	29	58	42	53	44	56	39			51	45			53	42			53	28
5.....	60	45	50	45	45	37	60	41	58	50	54	45			55	48			56	52			48	36
6.....	57	45	58	46	54	39	61	43	58	46	60	44			55	44			59	41			59	44
7.....	59	45	50	42	48	34	65	42	57	50	57	32			55	44			56	41			58	38
8.....	68	48	68	42	57	42	67	38	54	50	52	42			56	46			69	48			58	42
9.....	56	36	57	44	61	45	68	38	57	47	60	33			55	44			56	45			66	41
10.....	54	34	49	39	50	25	70	40	55	45	60	32			55	47			54	44			66	42
11.....	58	42	54	39	47	23	69	44	55	47	60	42			55	46			57	48			51	26
12.....	64	48	62	47	53	39	70	42	60	53	59	39			61	47			64	52			60	38
13.....	62	46	58	45	51	40	68	48	60	48	54	44			57	44			60	45			58	30
14.....	50	42	58	41	50	40	65	40	57	47	61	38			50	41			56	41			56	37
15.....	54	39	50	33	50	28	60	36	59	42	55	22			55	47			55	36			57	36
16.....	41	37	63	34	50	27	64	32	59	43	52	29			57	47			53	37			51	25
17.....	43	34	64	58	48	32	66	33	62	46	45	27			53	38			51	39			49	24
18.....	65	34			53	34	69	35	65	55	42	32			58	47			60	37			50	27
19.....	65	40	55		49	36	65	38	59	47	52	36			51	44			51	41			45	28
20.....	54	39	43		44	26	60	37	54	39	57	29			53	43			53	36			57	31
21.....	65	44	47		47	28	62	31	58	39	52	29			51	36			56	29			46	22
22.....	66	43	45		49	28	64	32	56	40	55	27			49	39			52	33			49	28
23.....	51	33	53		47	25	65	34	56	40	56	23			42	33			47	36			44	22
24.....	54	36	43	31	45	21	68	32	61	45	48	22			50	40			44	39			49	17
25.....	38	32	42	24	42	17	64	38	60	43	54	22			51	37			43	40			44	19
26.....	35	32	43	24	41	17	63	31	60	44	46	23			52	37			41	38			48	18
27.....	43	29	48	32	42	26	68	32	58	42	43	19			50	36			47	36			50	17
28.....	48	30	44	28	42	22	66	34	54	39	49	23			45	31			46	40			48	21
29.....	47	29	36	26	41	24	65	36	50	39	46	23			48	33			49	39			42	15
30.....	46	38	38	31	41	18		32	52	43	52	24			51	42			50	39			48	34
Means.....	53.0	38.0	51.2*	38.3†	47.6	29.9	63.9*	36.8	57.3	45.2	52.7	30.9			52.3	41.8			53.0	40.6			52.2	29.5

\* , b , c , etc., indicate respectively 1, 2, 3, etc., days missing from the record.

§ § Instruments are read in the morning, the maximum temperature then read is charged to the preceding day, or which it almost always occurs.

NOTE.—In the Monthly Weather Review for October, 1911, on pp. 1599-1601 and 1603-1606, inclusive, make the word "July," in italics in the headline, read "October."



## WEATHER, FORECASTS AND WARNINGS.

By H. C. FRANKENFIELD, Professor of Meteorology.

## NORTHERN HEMISPHERE PRESSURE.

At the beginning of the month pressure was low over northern Asia, especially over central Siberia, but by the 3d there was a general recovery, most marked where the pressure had been lowest a few days before, and from the 4th to 8th, inclusive, the barometer readings at Tomsk and Irkutsk were well above 31 inches, with a crest of 31.42 inches at Irkutsk on the 7th. After the 8th there were alternate fluctuations between moderately low and moderately high pressure, except over northeastern Siberia, where low pressure was the rule, with a low reading of 29.29 inches at Yakutsk on the 21st. Over the north Pacific Ocean and Alaska there were a series of depressions that were remarkable for their persistence and for the low barometer readings recorded. On only three days was there a reaction to normal conditions, and at Dutch Harbor there was a low reading of 27.55 inches at 2 p. m. of the 16th. The following special report on this abnormally low barometer reading was kindly furnished by Mr. S. Applegate, formerly an observer of the Weather Bureau:

## UNALASKA, ALASKA, November 17, 1912.

I am sending you a report of the weather conditions at Unalaska, yesterday, 16th, when our barometer registered the extreme low pressure of 27.55 inches at 2 p. m.

On the forenoon of the 15th the weather indications in the early morning were nothing unusual, except that the barometer was somewhat below normal, registering 29.25 during the forenoon and falling slowly, and the sky was partly covered by stratus clouds with little motion.

By 9 a. m. more wind was observed on the mountain tops by the snow being picked up and whirled about. The natives, on noticing this, said it was going to be bad.

They probably noticed it more in this instance because the U. S. revenue cutter *Bear* had just left for the States, and they thought it would have been better for her to remain in port and wait.

Before noon there was slightly more wind with good indications that it would get worse. During the forenoon the wind was from the southeast, blowing between 12 and 18 miles per hour with cloudy weather and some rain at times, and with the barometer falling slowly.

During the night the weather got much worse, the wind increased to probably 30 miles, with heavy rain. In the early morning and forenoon of the 16th the wind had increased slightly, blowing between 30 and 36 miles, and squally, with steady rain and falling barometer.

At 8 a. m. the barometer registered 28.00 and fell quite rapidly till 2 p. m. In the meantime the wind became less squally before noon, with the weather showing a tendency to clear up, which it did quite rapidly soon after midday.

At 2 p. m. the barometer registered 27.55 and remained stationary the rest of the day, with clouds broken up and the wind decreasing to light.

It remained nearly calm all night of the 16th, with the sky partly covered with clouds.

At 8 a. m., the 17th, the barometer showed 28.00, weather fair and almost calm all forenoon; the sky was partly covered with broken stratus clouds, which merged more or less into the cumulo-form.

As the weather in the harbor was nothing more than a light storm, it may have been more severe a short distance away from here.

The *Bear*, no doubt, had to lay-to during this blow and probably was somewhere between 50 and 100 miles east of here.

Perhaps much could be learned from her weather record, which is taken hourly.

We have four barometers here, one mercurial and three aneroids, and none of them shows a difference greater than 0.08 of an inch.

The reading, 27.55, was taken from my aneroid and corrected to agree with the mercurial barometer.

As is generally the case, opposite conditions prevailed over the south Pacific Ocean, as indicated by the pressure at Honolulu, where the barometer did not fall below the normal until the recovery began over Alaska during the last few days of the month. There was little or no movement of the extensive low-pressure condition, although some offshoots apparently moved eastward in moderate form over Canada. Over the United States pressure conditions were not of such character as to call for special comment. There was a regular progression of moderately high and low areas, with the result that there were no decided extremes of weather and temperature conditions until the last few days of the month, when there was a decided change over the east and south, due to the sudden appearance and rapid development and northeastward movement of an Atlantic coast disturbance. Over the Atlantic Ocean high pressure ruled, except over the east central portion, where a moderate depression persisted during the first week of the month.

Over northern Europe weather conditions were quite pronounced, with low pressure predominating. There was a strong high area over Iceland during the first three days of the month, followed by a greater fall to below normal conditions from the 5th to the 10th, inclusive, and an equally marked rise to above normal conditions on the 12th. These general fluctuations moved eastward in modified form until northwestern Russia was reached and, after the passage of the Iceland high area on the 12th, low pressure prevailed as a rule. Over central and southern Europe pressure was relatively high, except during a few days toward the middle and at the end of the month. The lowest barometer readings were recorded on the 11th and 12th, the depression forming the southern extension of the severe storm that passed over Iceland on the two previous days.

Two instances of departures from general pressure distribution over the United States are worthy of some special mention. The first was a tropical disturbance, of which the first reported indications were violent thunderstorms on the 11th over the island of Jamaica. During the 11th and 12th radiograms from vessels in the Caribbean Sea east of Nicaragua showed falling pressure, and on the 13th, through the aid of vessel radiograms, a definite center of disturbance was noted from 100 to 150 miles east of the Nicaragua coast, with a barometer reading of 29.30 inches. The storm apparently recurved after reaching that point and by the 16th had reached the island of Jamaica, where the barometer had been falling slowly but steadily since the 11th. The storm increased steadily in intensity after the turn to the northeastward, and it was apparently felt in its greatest severity over the extreme western portion of the island of Jamaica. The hurricane began over the island on the 15th and continued for several days. The pressure fell steadily until 6 a. m. of the 18th, at which hour the barometer at Negril Point read 28.487 inches, while at Kingston at the same time the reading was about 1 inch higher. Vessels in the path of the storm reported wind velocities of more than 100 miles an hour, and at Negril Point the anemometer



recorded a velocity of 120 miles an hour from the northeast at 2.03 a. m. of the 18th, when two of the cups were wrenched off, with the wind still increasing. The barometer at that time read 28.90 inches, and for 12 hours previously the wind had been blowing between 60 and 80 miles an hour from the southeast. By 10 a. m. the wind had shifted to northwest, but was still blowing with hurricane force with a barometer reading of 28.78 inches. From 7 a. m. of the 17th to 2 a. m. of the 18th the average wind velocity was 66 miles an hour, while the rainfall for the 24 hours ending at 7 a. m. of the 18th was 12.79 inches. There had also been 3.34 inches during the previous 24 hours.

The first advices regarding this storm were issued on the 13th and were repeated later as often as information became available. These advices were also distributed by radiotelegraph to vessels in the vicinity, and mail reports indicated that they were of much value.

Great damage was wrought in Jamaica. Several towns were practically wiped out by winds and tidal waves, and the loss of approximately 100 lives was reported. At the town of Savannah La Mar, on the south coast of the island, the tidal wave was the highest in a century. After leaving Jamaica the intensity of the storm decreased and on the morning of the 20th, a vessel radiogram from the Windward Passage showed a barometer reading of 29.84 inches with a moderately strong northeast wind. The storm apparently continued northward a short distance to the westward of Turks Island, and was next noted on the morning of the 23d about 300 miles east of Charleston, S. C. It then continued due northward with slowly increasing energy and by the morning of the 25th had reached northern New York. After this time it moved northeastward and was last noted over Nova Scotia on the morning of the 26th. More details of the action of this storm after it reached the coast of the United States will be found in the discussion of the general weather conditions. A rather full account of this storm, furnished by the Hon. Maxwell Hall, Government meteorologist for Jamaica, appears elsewhere in this Review.

The second unusual pressure variation was that of the Atlantic coast storm of November 28 and 29, and, as this directly affected the coast States, it will also be discussed with the general weather conditions.

#### WEATHER IN THE UNITED STATES.

At the beginning of the month the southwestern storm that was in progress at the end of October had reached the lower Lake region, with general rains falling east of the Mississippi River, except in New England, and with strong winds and high temperatures in the lower Lake region. Storm warnings had previously been ordered on the Great Lakes, and on the 1st they were ordered displayed on the Atlantic coast from Hatteras, N. C., to Eastport, Me. During the night of the 1st the three-masted schooner, *John Maxwell*, was wrecked on the shoals on New Inlet, N. C., and only the captain was saved, the entire crew of seven men being drowned. The sloop yacht, *Crown*, was blown offshore near Hog Island, Va., but the crew was taken off by the steamer *Bayno*. There was also some damage to shipping on eastern Lake Erie. The storm continued east-northeastward over the St. Lawrence Valley and passed off the Nova Scotia coast during the night of the 2d. The high area following this storm was accompanied by a considerable fall in temperature with heavy to killing frosts on the 2d from

interior Texas northeastward, the frosts continuing on the 3d and extending into the east Gulf and Atlantic States generally, except eastern Florida. Warnings of these frosts and freezing temperatures were issued in all cases 24 hours in advance, and they were again issued on the 3d for the killing frosts that occurred on the 4th over the middle and south Atlantic States, except Florida.

In the meantime another disturbance, noted on the 1st over the Canadian far Northwest, was moving eastward over the northern portion of the country. The general depression at first moved southward as well as eastward attended by rains and snows west of the Rocky Mountains, but with rapidly rising temperature only to the eastward. The southern portion of this depression disappeared during the night of the 3d, while the principal depression moved to the northeastward of Lake Superior after causing some light local rains in the Lake region. Pressure continued high over the eastern portion of the country and the Atlantic Ocean, but there was no recovery in the West, as another low that appeared on the extreme north Pacific coast on the morning of the 1st moved slowly down over the Plateau region, reaching western Kansas on the morning of the 6th. It then moved east-northeastward. Thereafter its history was peculiar. On the morning of the 6th a moderate disturbance appeared over Pensacola, Fla., while the western storm was over Illinois. Both continued northeastward with increasing intensity, and by the evening of the 7th they had merged into a single storm of marked intensity central over eastern New York. In the meantime pressure had risen rapidly from the Gulf of St. Lawrence eastward, and the progress of the storm was arrested, although low pressure continued for several days after over the Canadian Maritime Provinces, the last evidences appearing at St. Johns, Newfoundland, on the 14th. This storm was attended by general rains, except along the east slope of the Rocky Mountains, and by high temperatures. In the Atlantic States heavy rains fell on the 7th. Storm warnings were ordered on the 6th on the northwest Florida coast and on the 7th from Wilmington, N. C., to Eastport, Me. In all cases the warnings were followed by high winds, ranging from 35 to 60 miles an hour.

Again the pressure recovery was not decided, owing to the approach of another disturbance, and frost warnings on the 6th for Tennessee, Mississippi, and the Southwest failed of verification. The barometer remained low on the north Pacific coast with continued rains, and storm warnings were necessary on the 6th, 7th, 9th, and 11th, and on the first-named date a low began to move eastward over the Canadian northwest. It was a dry low until the upper Lakes were reached, and on the 9th it apparently merged with the remnants of the preceding storm. Some moderately high winds occurred on the 8th on the Great Lakes, but none was of much consequence. For a day or two high pressure prevailed over the central and eastern portion of the country with moderate temperatures, but pressure had again been falling over the West, and on the 9th another low of considerable intensity started eastward over the Canadian northwest, and still another equally marked neared the north Pacific coast. The Canadian disturbance moved almost due eastward, the prevailing high pressure to the southeastward preventing any movement in that direction, and during the 10th it disappeared northeast of Lake Superior without having caused any material change in weather conditions along its course. However, the eastern and southern high area was slowly giving way, and by the evening of the 10th the north Pacific coast low of the 9th had reached South Dakota,



after sending an offshoot to Utah. Rains were general west of the Rocky Mountains, but as yet there had been no results to the eastward, except a marked rise in temperature. By the evening of the 11th the trough of low pressure extended from western Kansas to Ontario without precipitation, except some rain and snow in Montana and the Rocky Mountain region, but by the morning of the 12th the northern center had reached the lower St. Lawrence Valley with some snow and rain in that immediate vicinity, while the southern center had moved to western Missouri attended by general rains in the Missouri and upper Mississippi Valleys and western upper Lake region.

The storm continued northeastward during the 12th, and storm warnings were ordered for the northern and western upper Lake region. By the morning of the 13th the storm was central over southern Michigan, the rains had extended through the Ohio Valley, the Lake region generally, New York, and New England, and storm warnings were ordered for the balance of the Great Lakes and on the Atlantic coast from Cape May, N. J., to Eastport, Me. Snow fell in the upper Lake region, and severe gales occurred on the Great Lakes and along the Atlantic coast, causing considerable damage to shipping. In the lower St. Lawrence Valley the high winds on the 13th and 14th were accompanied by a fall of snow so heavy that shipping was paralyzed and outside business brought to a standstill. By the morning of the 14th the storm had lost much of its definite formation and presented two distinct centers, one over Lake Huron and the other off the New Jersey coast, with general rains in New England and the middle Atlantic States and rains and snows in the Lake region. The depression then moved slowly eastward and northeastward and it was not until the 17th that the last indications were observed off the coast of Nova Scotia. A fairly well-defined high area, with a temperature fall to nearly normal conditions, followed this storm, and on the 15th warnings were issued for the frosts that occurred in the Southern States on the following morning. Pressure still remained low from the Pacific coast northward, and, beginning on the 13th, another depression moved across the Canadian northwest. It was nearly dry and almost entirely lost its energy by the time it reached western Lake Superior on account of the marked high pressure both in front and in the rear. However, there was a redevelopment during the 16th, with a rapid eastward movement, and by the time the low had passed off the Nova Scotia coast on the 20th it had attained the proportions of a severe storm. Snows and rains fell from the Lake region eastward, but there were no high winds, and the high area following over the Lakes was short lived and of moderate character only. The interior high area was of much greater magnitude and proved to be the most extensive and pronounced one of the month. It first appeared in very moderate form over British Columbia on the evening of the 14th and afterwards spread eastward and southward over the entire western half of the country with a crest of 30.80 inches over western South Dakota on the morning of the 16th. It then apparently joined forces with the southern portion of the eastern high area that had rapidly recovered after the passing of the last low area, and high pressure was general except over the northeastern and northwestern extremities of the country. There was a sharp fall in temperatures and heavy frosts or freezing temperatures were general in the Southern States on the 17th.

The pressure remained high in the Southeast until the 21st, with resulting fair weather over the country

generally, except in the Pacific Northwest, where rains continued. Low temperature also continued in the South. On the evening of the 16th a depression appeared off the extreme north Pacific coast. It caused rains and high winds on the 18th on the Washington coast (storm warnings ordered on the evening of the 17th), and then moved eastward over Canada without precipitation, reaching the Newfoundland coast on the morning of the 20th, the barometer at St. Johns reading 29.40 inches. Another disturbance of similar character followed quickly, leaving the north Pacific coast on the evening of the 18th, and reaching the Gulf of St. Lawrence on the evening of the 21st. A high area of good proportions followed this low, and it spread eastward and southeastward over the middle and southern Plateau and Rocky Mountain regions, reaching the central valleys with lessened strength on the 21st, but continuing in nearly full vigor over the middle Plateau until the 23d, when it moved eastward. In the meantime a third low had moved eastward over Canada, leaving the Pacific coast on the 20th and reaching the Gulf of St. Lawrence on the morning of the 23d. This low was also practically dry, except on the Washington coast, where there were rains with some high winds for which warnings were necessary. The disturbance of the 18th also sent an offshoot southeastward over the Plateau region, causing light rains and snows. It continued southeastward and passed into the Gulf of Mexico on the 22d, after causing general and substantial rains over eastern Texas. No cold weather of consequence followed, and frost forecasts for the Southwestern States failed of verification in eastern Texas.

During the 21st another disturbance moved in from the extreme north Pacific coast. This one inclined more to the southward than had its immediate predecessors. It was followed by a decided fall in temperature in the Plains States and by the Plateau high before mentioned, and when it reached Lake Michigan on the morning of the 23d it had developed into a pronounced low with snow and increasing winds, for which storm warnings were ordered. On the following morning it was found that the storm center had moved only a few miles to the eastward, with high winds continuing and rain and snow still falling over the upper Lake region. Several lives were lost, and some shipping casualties were reported on the upper Lakes. The situation had now become complicated through the approach of the West Indian disturbance that had visited the island of Jamaica a week before. This storm was now (November 24) near the southern New Jersey coast, and rains and snows had extended into the lower Lake region and the middle Atlantic States. Storm warnings were ordered on the coast from Delaware Breakwater northward, and during the night and the day following high winds occurred generally, with heavy snows and rains in New York and New England. The storm center by this time (November 25) had moved into northwestern New England, while the one over Michigan had disappeared. The coast storm then moved northeastward and disappeared into the Atlantic during the night of the 25th. The high area following kept well to the southward, necessitating general warnings on the 24th for the heavy frosts that occurred on the following morning as far south as extreme northern Florida. Pressure did not recover rapidly to the northward as another low had reached eastern Lake Superior. This low appeared over Alberta on the 23d, but did not develop to any extent until it reached the Great Lakes. It was not



severe at any time, but was attended by general rain and snow, mostly snow, and passed out of the Gulf of St. Lawrence on the night of the 27th. Over northern New York the snowfall was very heavy, and at Canton there was a fall of 24 inches during the 12 hours ending at 8 a. m., of the 27th. An extensive high pressure area followed this disturbance and temperatures fell considerably. Frosts occurred, as forecast, for several days in California.

On the night of the 27th the barometer was still high over the interior of the country except the Northwest, with the crest of high pressure over Texas, and cold wave and heavy frost and freezing temperature warnings were ordered for the Southwest. Conditions as forecast occurred on the following morning, and extended on the 29th and 30th to the south Atlantic coast, except over Florida. The low temperature in the east Gulf and south Atlantic States was preceded by a very remarkable change in weather conditions. On the morning of the 27th the pressure was high and rising, ranging from 30.68 inches over the Texas Panhandle to 30.26 inches on the South Carolina coast. It fell somewhat during the day over the south Atlantic States, but rose in the Gulf States, and snow fell generally and in substantial quantity throughout the Southern States east of the Mississippi River. There had also been some snow on the 26th from Arkansas westward to northwestern Texas, and light rains to the southward of this area. By the evening of the 27th there were some indications of a disturbance off and near the northern coast of Florida, and cautionary advices were at once telegraphed to coast stations. By the morning of the 28th pressure had fallen 0.42 inch at Hatteras, N. C., with a northwest wind of 48 miles an hour and storm warnings were at once ordered along the entire coast from Hatteras northward. The storm did not touch the coast but continued to make rapid progress to the north-northeastward, and on the morning of the 29th the center was to the northward of St. Johns, Newfoundland, the barometer at that place reading 29.24 inches. Snow occurred generally in the Atlantic States, but the only high winds north of the Virginia coast occurred on the New England coast, Nantucket, Mass., reporting 60 miles an hour from the northeast during the afternoon of the 28th.

A mail report from the captain of the steamship *Lakonia* stated that while in latitude 40° N. and longitude 68° W., approximately 200 miles southeast of Nantucket, a fresh southerly gale blew during the evening of the 28th and at 12.15 a. m. of the 29th shifted to north-northeast, backing later to northwest and blowing with hurricane force and accompanied by rain and hail. At 1 a. m. of the 29th the ship's barometer read 29.02 inches, but by 4 a. m. it had risen to 29.80 inches, when the position of the vessel was latitude 39° 41' N. and longitude 69° 1' W. approximately. It is impossible to speak with precision as to the origin of this storm. It apparently developed in its incipency immediately above the cold and shallow high in the neighborhood of the northwest coast of the Gulf of Mexico, possibly near the Louisiana coast, not increasing to any extent, and not reaching the surface until it had crossed over the northern portion of the Florida Peninsula. It presents a striking illustration of the limitations that encompass the art of weather forecasting and affords another effective argument for the increase of our facilities for the observation and study of the upper atmosphere by means of the kite and balloon.

On the 27th a depression appeared over northern Alberta. It was probably an offshoot from the abnormally low area that prevailed over Alaska during the greater portion of the month and it moved eastward over Canada after sending an arm to the southward along the eastern slope of the Rocky Mountains. The secondary depression disappeared during the night of the 28th without unusual incident, while the main one continued eastward, with only light local precipitation over the northern border States, and disappeared off the Nova Scotia coast during the night of the 30th. At the end of the month high pressure prevailed over the eastern half of the country and low pressure over the western half. A disturbance attended by rains appeared on the extreme north Pacific coast on the morning of the 29th and storm warnings were ordered for the high winds that prevailed later in the day. By the end of the month the center of the disturbance was over eastern Colorado and rains and snows had fallen over Idaho, western Montana, Utah, Wyoming, and western Colorado. Another low had also appeared off the northern Washington coast.

*Average temperatures and departures from the normal.*

Districts.	Number of stations.	Average temperatures for the current month.	Departures for the current month.	Accumulated departures since Jan. 1.	Average departures since Jan. 1.
New England.....	12	42.3	+2.9	- 5.9	-0.5
Middle Atlantic.....	15	46.1	+2.2	- 6.1	-0.6
South Atlantic.....	10	53.1	-1.0	- 0.9	-0.1
Florida Peninsula <sup>1</sup> .....	9	63.7	-1.6	- 0.9	-0.1
East Gulf.....	11	53.3	-2.3	- 8.1	-0.7
West Gulf.....	11	56.4	+0.1	- 9.6	-0.9
Ohio Valley and Tennessee.....	14	45.4	+0.5	-15.8	-1.4
Lower Lakes.....	11	41.7	+2.6	-21.8	-2.0
Upper Lakes.....	13	37.2	+2.9	-21.5	-2.0
North Dakota <sup>1</sup> .....	8	31.7	+6.1	- 9.4	-0.9
Upper Mississippi Valley.....	14	42.1	+4.5	-18.4	-1.7
Missouri Valley.....	12	43.1	+5.7	- 8.5	-0.8
Northern slope.....	9	37.7	+5.7	-15.6	-1.4
Middle slope.....	6	45.4	+3.6	-16.8	-1.5
Southern slope <sup>1</sup> .....	8	50.1	-0.3	- 9.6	-0.9
Southern Plateau <sup>1</sup> .....	10	48.3	-0.6	-12.9	-1.2
Middle Plateau <sup>1</sup> .....	10	38.0	+0.8	-14.9	-1.4
Northern Plateau <sup>1</sup> .....	10	40.0	+3.0	-10.4	-0.9
North Pacific.....	7	46.2	+1.1	+ 7.6	+0.7
Middle Pacific.....	7	53.5	+0.5	- 2.9	-0.3
South Pacific.....	4	60.0	+2.9	+ 5.4	+0.5

<sup>1</sup> Regular Weather Bureau and selected cooperative stations.

*Average precipitation and departures from the normal.*

Districts.	Number of stations.	Average.		Departure.	
		Current month.	Percentage of normal.	Current month.	Accumulated since Jan. 1.
New England.....	11	3.24	92	-0.30	- 3.60
Middle Atlantic.....	15	2.37	86	-0.40	- 0.90
South Atlantic.....	11	2.06	70	-0.90	- 3.40
Florida Peninsula <sup>1</sup> .....	9	3.18	146	+1.00	+10.90
East Gulf.....	11	2.20	63	-1.30	+13.90
West Gulf.....	10	1.04	34	-2.00	- 5.50
Ohio Valley and Tennessee.....	14	0.98	28	-2.50	- 0.80
Lower Lakes.....	10	2.56	84	-0.50	+ 0.80
Upper Lakes.....	13	1.75	71	-0.70	- 1.10
North Dakota <sup>1</sup> .....	9	0.17	22	-0.60	+ 1.60
Upper Mississippi Valley.....	15	1.14	56	-0.90	- 2.20
Missouri Valley.....	12	0.75	60	-0.50	- 3.40
Northern slope.....	9	0.56	58	-0.40	+ 0.30
Middle slope.....	6	0.40	40	-0.60	+ 0.20
Southern slope <sup>1</sup> .....	8	0.44	27	-1.20	+ 0.50
Southern Plateau <sup>1</sup> .....	9	0.12	19	-0.50	- 0.10
Middle Plateau <sup>1</sup> .....	11	0.67	87	-0.10	+ 0.50
Northern Plateau <sup>1</sup> .....	10	1.58	89	-0.20	+ 2.80
North Pacific.....	7	7.56	104	+0.30	- 1.20
Middle Pacific.....	7	2.64	87	-0.40	- 3.80
South Pacific.....	4	2.39	80	-0.60	- 1.40

<sup>1</sup> Regular Weather Bureau and selected cooperative stations.



*Average relative humidity and departure from the normal.*

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England.....	75	- 3	Missouri Valley.....	62	- 9
Middle Atlantic.....	69	- 6	Northern slope.....	65	- 2
South Atlantic.....	68	-10	Middle slope.....	60	- 2
Florida Peninsula.....	78	- 2	Southern slope.....	60	- 2
East Gulf.....	69	- 7	Southern Plateau.....	47	+ 4
West Gulf.....	68	- 6	Middle Plateau.....	61	+ 3
Ohio Valley and Tennessee.....	67	- 6	Northern Plateau.....	70	- 4
Lower Lakes.....	75	- 2	North Pacific.....	88	+ 4
Upper Lakes.....	78	- 2	Middle Pacific.....	78	+ 3
North Dakota.....	78	- 1	South Pacific.....	60	- 7
Upper Mississippi Valley.....	70	- 4			

*Average cloudiness and departure from the normal.*

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England.....	6.1	+0.3	Missouri Valley.....	3.7	-1.1
Middle Atlantic.....	5.0	-0.3	Northern slope.....	5.4	+0.6
South Atlantic.....	3.1	-1.4	Middle slope.....	3.1	-0.8
Florida Peninsula.....	4.5	+0.2	Southern slope.....	3.1	-2.1
East Gulf.....	3.4	-1.2	Southern Plateau.....	2.2	-0.6
West Gulf.....	3.8	-0.8	Middle Plateau.....	3.6	-0.3
Ohio Valley and Tennessee.....	4.8	-0.9	Northern Plateau.....	7.3	+1.5
Lower Lakes.....	6.7	-0.6	North Pacific.....	8.3	+0.8
Upper Lakes.....	6.7	-0.4	Middle Pacific.....	5.1	+0.6
North Dakota.....	5.2	-0.2	South Pacific.....	2.8	-0.5
Upper Mississippi Valley.....	4.6	-0.7			

*Maximum wind velocities.*

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Block Island, R. I..	25	56	w.	New York, N. Y....	1	53	sw.
Do.....	28	55	n.	Do.....	7	58	s.
Buffalo, N. Y.....	1	72	sw.	Do.....	9	52	nw.
Do.....	5	54	sw.	Do.....	24	57	w.
Do.....	13	54	sw.	Do.....	25	60	nw.
Do.....	14	54	sw.	North Head, Wash.	4	66	se.
Do.....	19	56	sw.	Do.....	7	60	se.
Do.....	26	56	sw.	Do.....	9	60	se.
Do.....	29	60	w.	Do.....	10	57	se.
Do.....	30	52	w.	Do.....	11	66	se.
Canton, N. Y.....	1	66	sw.	Do.....	12	76	se.
Cleveland, Ohio.....	9	50	w.	Do.....	18	60	se.
Duluth, Minn.....	20	50	w.	Do.....	29	56	se.
Eastport, Me.....	25	60	ne.	Pierre, S. Dak.....	22	51	nw.
El Paso, Tex.....	15	51	ne.	Point Reyes Light, Cal.....	9	54	s.
Grand Haven, Mich	23	52	w.	Do.....	10	50	nw.
Green Bay, Wis.....	24	54	n.	Do.....	19	60	nw.
Hatteras, N. C.....	28	66	nw.	Do.....	25	50	e.
Helena, Mont.....	22	70	sw.	Portland, Me.....	28	54	nw.
Mount Tamalpais, Cal.....	5	54	sw.	Sand Key, Fla.....	6	60	sw.
Do.....	10	51	nw.	Tatoosh Island, Wash.....	7	54	sw.
Do.....	19	66	nw.	Do.....	9	52	ne.
Do.....	29	62	nw.	Do.....	12	84	s.
Do.....	30	64	nw.	Do.....	14	50	e.
Mount Weather, Va.	8	53	nw.	Do.....	20	60	s.
Do.....	9	50	nw.	Do.....	21	66	s.
Do.....	25	65	nw.	Do.....	26	50	e.
Nantucket, Mass.....	25	55	s.				
Do.....	28	62	ne.				



**RIVERS AND FLOODS, NOVEMBER, 1912.**

By A. J. HENRY, Professor in Charge, River and Flood Division.

Heavy rains on the 7th caused sharp rises in the rivers of North and South Carolina, and crest stages were recorded as follows: In the Wateree River at Camden, S. C., 27.6 feet, 3.6 feet above flood stage, on the 8th; in the Saluda River at Chappells, S. C., 17.2 feet, 3.2 feet above flood stage, on the 8th; in the Congaree River at Columbia, S. C., 17.9 feet, 2.9 feet above flood stage, on the 7th; in the Santee River at Rimini, S. C., 16.2 feet, 4.2 feet above flood stage, on the 12th, and at Ferguson, S. C., 14 feet, 2 feet above flood stage, on the 13th; and in the Salkehatchie River at Broxton, S. C., 7.5 feet, 0.5 foot above flood stage, on the 14th. Ample warnings were issued for these floods, and it is estimated that \$50,000 worth of property was saved thereby. About \$15,000 damage was done to crops.

The Savannah River overflowed the lowlands below Augusta, Ga., on the 6th and did some damage to crops.

Moderate floods occurred in the Penobscot River, Me., and in the Tittabawassee River in Michigan, but the resulting damage was small. The usual warnings were issued for all the floods.

Hydrographs for typical points on several principal rivers are shown on Chart I. The stations selected for charting are Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.



## SPECIAL PAPERS ON GENERAL METEOROLOGY.

## RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. FITZHUGH TALMAN, Junior Professor in Charge of Library.

The following have been selected from among the titles of books recently received as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies. Anonymous publications are indicated by a ———.

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Zur mathematischen Theorie der Polarlicht-Erscheinungen. [Berlin. 1912.] 70 p. 8°. (Diss.—Berlin.)

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Experimentelle Untersuchungen aus dem Grenzgebiet zwischen drahtloser Telegraphie und Luftelektrizität. Teil 1. Berlin. 1912. viii, 73 p. 4°.

**Durig, A.**

Physiologische Wirkungen des Höhenklimas. (In Wiener klinische Wochenschrift, Wien, 4. Mai 1911, 24. Jhrg., Nr. 18, p. 619-631.)

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Der Fallschirm, seine geschichtliche Entwicklung und sein technisches Problem. Berlin. 1912. 189 p. 8°.

**Freybe, Otto.**

Wetterkartenatlas. Eine methodisch geordnete Sammlung von Wetterkarten mit erläuterndem Text. Berlin. n. d. 20 p. 20 maps. 8°.

**Gautier, Friederich.**

Interdiurne Wärme-Änderungen an den badischen meteorologischen Stationen Karlsruhe, Villingen und Höchenschwand. Freiburg im Breisgau. 1912. 64 p. 8°. (Diss.—Freiburg.)

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**Willcocks, W.**

The irrigation of Mesopotamia. London. 1911. 136 p. text &amp; atlas. 4°.

## RECENT PAPERS BEARING ON METEOROLOGY.

C. FITZHUGH TALMAN, Junior Professor in Charge of Library.

The subjoined titles have been selected from the contents of the periodicals and serials recently received in the Library of the Weather Bureau. The titles selected are of papers and other communications bearing on meteorology and cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled. It shows only the articles that appear to the compiler likely to



be of particular interest in connection with the work of the Weather Bureau. Unsigned articles are indicated by a —.

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## THE RISE OF TEMPERATURE ASSOCIATED WITH THE MELTING OF ICEBERGS.

[By H. T. BARNES, F. R. S., McGill University, Montreal, Canada. Reprint from *Nature*, December, 1912.]

In a letter to *Nature* published in the issue of December 1, 1910, I showed by means of microthermograms taken on a trip to Hudson's Straits that an iceburg melting in salt water produces a rise of temperature. The experiments were performed on the Canadian Government



steamship *Stanley*, and indicated that when approaching ice a rise of temperature occurred followed by a rapid fall of temperature a quarter of a mile abeam of the berg.

During the past summer I had an opportunity of examining in detail the temperature effects of icebergs. The Canadian Government placed its steamship *Montcalm* at my disposal for the tests, and three weeks were spent through the Straits of Belle Isle. Careful records were made of the temperature effects of icebergs and land. These tests have shown conclusively that it is the *rise of temperature which is the direct action of the melting iceberg*, and that when a fall of temperature is observed near ice it is due to the action of a colder current in which the iceberg is floating, and is not due to the cooling influence of the ice. Cooler currents may exist

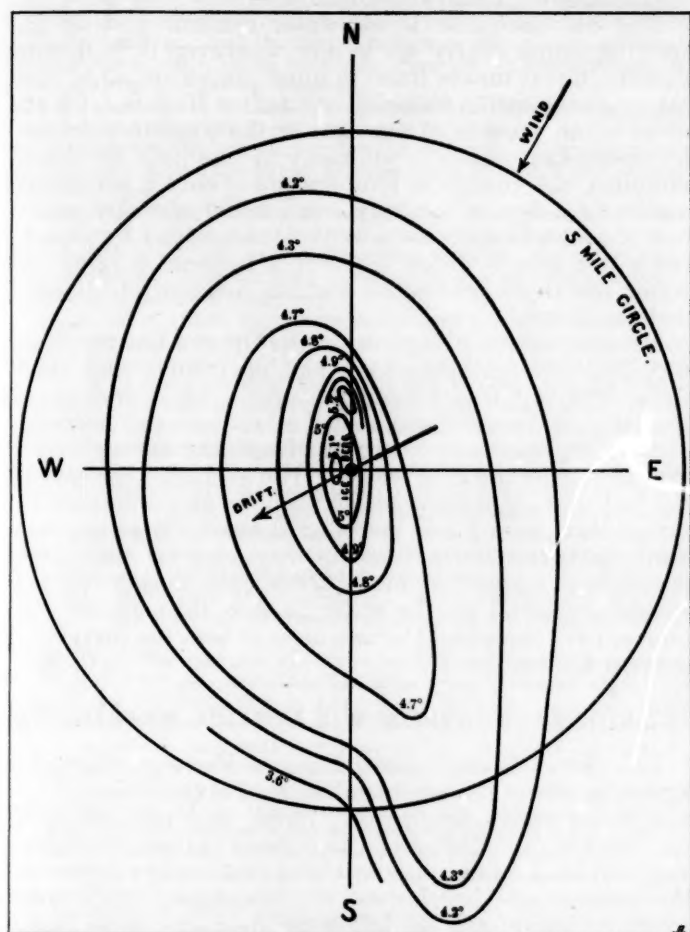


FIG. 1.—Isothermal lines around an iceberg.

throughout the Arctic current whether accompanied by ice or not, but the presence of the ice causes a zone of warmer water to accumulate for a considerable distance about it.

The icebergs I studied in the Straits of Belle Isle and off the eastern end of the straits in the Labrador current showed no appreciable cooling even within a few yards of them. The rise of temperature approaching an isolated berg was somewhat over  $2^{\circ}$  C. In figure 1, I show the isothermal lines about a typical berg off the eastern entrance to the Straits of Belle Isle. This diagram was obtained by arranging a number of courses for the ship from all sides up to a radius of 6 miles.

As a good example of how icebergs and groups of icebergs affect the water temperature, I show a microthermogram in figure 2 taken from the records made passing

westward through the Straits of Belle Isle. In every case the approach to ice caused a rise of temperature.

The explanation of this effect which I gave at my Friday evening discourse at the Royal Institution last May was founded on Pettersson's theory of ice melting in salt water. By this theory, which can easily be verified by a simple experiment, ice melting in salt water

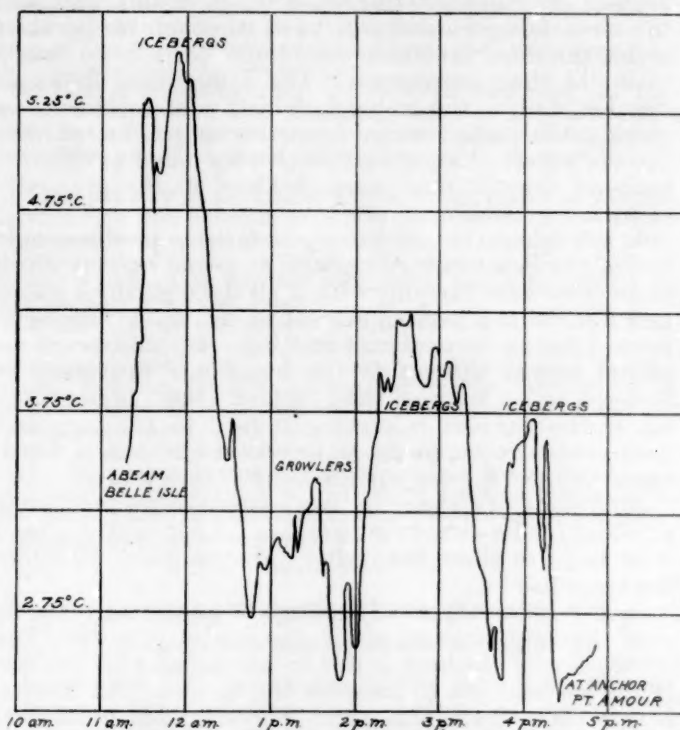


FIG. 2.—Microthermogram through the Straits of Belle Isle, showing effect of ice on the temperature of the water.

produces three currents: (1) A current of salt water cooled by the ice which sinks downward by gravity; (2) a current of warm salt water flowing toward the ice; (3) a current of light fresh water from the ice rising and spreading out over the surface of the salt water.

I at first thought that it was this surface current of fresh water that influenced the microthermometer. The fringe of this lighter water would be lighter than the sea

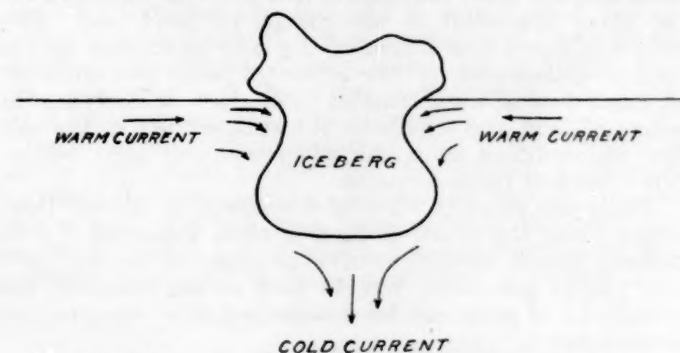


FIG. 3.—Currents set up by a slowly melting iceberg in salt water.

water on account of the action of the sun and scattered radiation which is very strong at sea. The lighter water would retain the heat because it could not mix readily with the sea water. Near the iceberg I considered that a fall of temperature would result from the cooling influence of the surface current of fresher water.

My recent tests have shown, however, that an iceberg melts so slowly that no effect of the dilution can be



detected even right beside the berg. I took a number of samples of sea water at different distances from the icebergs, as well as samples taken far from ice. These samples I carefully bottled and brought home to the laboratory, where they were most accurately tested for me by the electric conductivity method in the physico-chemical department by Dr. McIntosh and Mr. Otto Maass. No possible error could result in this way, and the tests being carried out at a constant temperature under the most favorable conditions, there is no reason to doubt their correctness. The comparison shows no dilution due to the icebergs, which goes to show how quickly the melted water from the berg is mixed with the sea water. Larger variations were found at different parts of the sea than were obtained in the proximity of ice.

It is evident that an iceberg in melting produces only two of the Pettersson currents, i. e., a cold current which sinks downward carrying with it all the melted ice water, and a horizontal surface current of sea water flowing in toward the ice to cause its melting. By this means we should expect the sea in the immediate proximity of icebergs to be warmer than farther away, because the sea surface current is moving inward to the berg and does not share in the normal vertical circulation which tends to keep the sea surface temperature cooler.

An iceberg in causing its own current of warmer water provides for its own disintegration. Abundant evidence is at hand to show the melting process going on under the water line.

In my observations of icebergs I was greatly struck with the large amount of air dissolved in the ice. The white color of the berg is due to innumerable air bubbles in the ice, and not to snow on the surface. An iceberg is very deceptive in this way. While it looks quite soft, the ice is so hard as to make it difficult to chop it with an axe. Ice water which I prepared for drinking on board ship with iceberg ice appeared to effervesce like soda water, merely due to the liberation of the air from the melting ice. It is possible that the sudden disappearance of bergs with a loud report is due to their explosion from accumulated air in their interior. I passed close to one berg which was casting off small pieces, apparently by the pressure of the pent-up air.

While icebergs send the temperature of the sea up, land and the coast line send it down. This was observed all along the coast in the Straits of Belle Isle. This effect is due to the action of the land in turning up the colder underwater by the action of tides and currents. A great deal of work remains to be done in studying the effect of land and shoals on the temperature of the sea, but observations show the effect not only here, but on the Irish and English coasts.

From the point of view of the safety of the St. Lawrence route the effect of land is most important. The iceberg causes us little worry because we have only a very short ice track, but to find means whereby the proximity of land can be determined is of the greatest importance.

#### **FRAZIL AND ANCHOR ICE DISSIPATED BY A SIMPLE REMEDY.**

The importance of keeping water and turbine wheels free from ice, so that work may not be interrupted in large factories, has led Dr. Howard T. Barnes, professor of physics at McGill University, Montreal, Canada, to study the method of formation of frazil and anchor ice with the view to finding some remedy for the many annoyances that

it causes in the cold winters of Canada (and to a less degree in many parts of the United States). It has long been recognized that the rising sun brings speedy relief to hydraulic plants that are frozen up with frazil. Experience had also shown that water wheels protected by wooden racks were better able to withstand frazil than those protected by iron racks. The fact is that the water when just at the freezing point needs only to be cooled the hundredth or the thousandth part of a degree Fahrenheit in order to turn into hard ice and that, too, in a very few minutes. Vice versa, when machinery is frozen up in frazil the latter will quickly turn back to water by the application of a little heat in the form of steam if properly turned on. By waiting several hours the ice may become as hard as stone, but the prompt application of steam will work marvels.

The St. Lawrence River water remains just at the freezing point nearly all winter wherever it is flowing rapidly, but it makes frazil in quiet places and after sunset, or above such a waterfall as Lachine Rapids. On the other hand, warmth of sunlight or the warmth produced by descending rapids is sufficient to dissipate the frazil, although the change in temperature is only a few thousandths of a degree. A very small boiler of water and a ton of coal will generate enough steam, if led by pipe to the water that is about to enter a turbine, to give the water the slight additional warmth necessary to protect it from frazil.

Mr. John Murphy, engineer of the Ottawa Electric Railway Co., says that they have had no trouble with frazil since applying this remedy in 1907. Of course many special patents have been issued relative to this new idea of warming the water to prevent frazil and anchor ice being formed in the cold water. The economy consists in the fact that by prompt action we prevent the formation, rather than wait a few hours until the ice becomes very hard, cold, and thick, therefore requiring an almost impracticable amount of heat. It is only during the few seconds required by the water to flow through the turbine or over the wheel that we need to heat the liquid and prevent the ice.

C. A.

#### **THE STORMS OF NOVEMBER IN JAMAICA, WEST INDIES.**

The Hon. Maxwell Hall, Esq., of Montego Bay, well known as one of the most learned men of the West Indies, and as an active astronomer, jurist, and meteorologist, the founder and director of the present system of meteorology on that island, has sent us a preliminary report on the storms and hurricanes of November, 1912, from which we make only the following abstracts, as he hopes to prepare a full report, with maps, showing the condition of the atmosphere for every two hours during the progress of the storms.

In connection with the worst of the hurricane which was at 6 p. m., November 18, at Kempshot, he says:

There was a most brilliant yellow light all over the confused sky and all around the horizon; it changed to orange, then to red, then clouded over with dark squalls, and suddenly the northwest hurricane of 120 miles per hour was down upon us. The light was seen all over the west end of the island and caused some alarm. At Falmouth it was seen at nighttime. When I first saw it we were just emerging from the central calm area 20 miles in diameter.

In his general account of the three several storms of the month, Mr. Hall says:

Heavy rains fell over the northeastern part of the island in the shires of St. Thomas, Portland, St. Andrew, and St. Mary, on the 10th, 11th, and 12th of November, 1912. On these three days 34 inches fell at Rose Hill near Hardware Gap in St. Andrew's Parish, and 36 inches fell in Moy Hall near Cedar Valley in St. Thomas Parish. These rains produced



floods which damaged the roads and caused a large landslide at Vaughans Rock near Castleton, where four or five acres of land moved downwards and partly blocked the wagwater. The high northerly winds which accompanied the rains blew down very many banana trees.

These winds and rains were produced by a large and shallow barometric depression which was then south of the east end of the island, moving leisurely westward. On the 13th it was south of the middle of the island, and the fall of the barometer at Kingston was about a tenth and a half of an inch. On the 14th its presence was felt at the Kempshot Observatory and at the Negril Point Lighthouse; and on the 15th and 16th its position south of Negril was well marked.

We must now return to Kingston. The break-up of a long-continued drought occurred on the afternoon of the 10th, with a heavy thunderstorm which lasted through the night, and rains fell during the passage of the southern depression. On the afternoon of the 14th the barometer began to rise, but between 7 a. m., and 3 p. m., the air currents at Kingston swung round to the south; this was well marked at the Weather Office, Halfway Tree, and a slight fall in the barometer showed that another depression was forming, this time in the middle of the island. But still the combined fall of the barometer was only a tenth and a half below the mean, and both the disturbances were only cases of our usual "depressions," which are so beneficial when not too strongly marked by heavy rains and stormy weather.

On the afternoon of the 15th the barometer in Kingston fell to 29.74, and the wind from the southeast rose to 20 miles an hour. At Kempshot the barometer was higher, namely 29.77 inches, with a light east wind; and this showed that the inland depression was felt more in Kingston than at Kempshot.

During these days telegraphic messages had been passing between Kingston and Kempshot, but the latter place is isolated and much time was lost; moreover, the inland depression confused the indications. These had already been confused at Kempshot by a storm or depression far away to the west or northwest.

On the 16th at 7 a. m. the barometer at Negril was 29.63, wind northeast, 12 miles an hour; at Kempshot it was 29.70, wind east, 4 miles an hour, so that up to this time there was no cause for apprehension, but at 11 a. m. it was noticed at Kempshot that the center of the Negril disturbance was turning northward and a telegram was at once sent to Kingston to warn the west end of the island. In the meantime the interior disturbance had broken the telegraphic communication in the middle of the island and the wires were still down on Sunday, the 17th, when I wished to inform Kingston that the center was then off the northwest end of the island, but the west end had received the general storm warnings from Kingston and they were posted at all the telegraph offices. Each hurricane season the public are advised to take every precaution after such warnings have been issued, for the telegraph wires may be broken, or two cyclones, or the curvature of a single cyclone in its course, may confuse the indications; all of which occurred at this time.

Referring to the map that will accompany the full report, the advancing cyclone "B" was strongly felt at Negril, but it was not until midnight of the 17th-18th that at Kempshot I became aware that there were two cyclones. Some lower clouds were moving from the southeast to cyclone A, and some were moving from the east to cyclone B, producing the wildest confusion in the sky dimly lit by moonlight.

Cyclone B arrived at St. Johns Point at 8 a. m., and from the duration of the calm at the lighthouse and its rate of motion it may be deduced that the diameter of the calm area was about 20 miles. Again, it passed centrally over Windsor Pen in Trelawny at 6 p. m., so that the center was moving at the rate of 4.7 miles per hour; and as the calm area took four hours to pass over Windsor, the diameter of the calm area was about 19 miles, which agrees very closely with the diameter found at Negril.

But while the barometer at Negril fell to 28.49, at Windsor it fell to only 29.32; so that the passage of cyclone B over the island, and also its encounter with cyclone A, had greatly reduced its intensity; so much so that on its onward course it did comparatively little damage.

Having given a general description of cyclone B we must now return to cyclone A which had greatly increased in intensity during the night of the 17th and early morning of the 18th. It wrecked the west end of the island and the town of Lucea shortly after midnight, and the center passed a little south of Great Valley in Hanover at 2.30 a. m. At midnight the wind at Great Valley blew with hurricane force from the southeast; at 5 a. m., the wind backed to the northeast with increased violence, but nothing is said about a calm in this interval, so that probably the diameter of the calm area was small.

The center of cyclone A was moving very slowly at about 3 miles an hour, and it was approaching Kempshot where the barometer slowly fell until 4.55 a. m. It was then 29.24, wind southeast, in violent gusts. Then the barometer began to rise slowly, so that the curve on its course carried the center nearest to Kempshot when the center passed over the Bogue Islands a little west of Montego Bay.

The barometer at Kempshot began to fall again at 6 a. m., to the advancing cyclone B with the wind east southeast or southeast.

Great Valley seems to have had little wind between 10 a. m., and 2 p. m., it was at first protected by its position between the two centers, and then it was in the large calm area of cyclone B. But at 2 p. m., the calm area had passed and the wind blew from the north with appalling violence.

At Kempshot, between 6 a. m. and noon, the wind veered from southeast to south-southeast and south, when it blew a hurricane until 1.20 p. m. This was due to an erratic approach of cyclone A. At 1.30 p. m., there was a lull, due to the calm area of cyclone B, but as Kempshot was on the edge of the calm area of cyclone A, the two calm areas may have united. At least there was the appearance in the sky of a calm area for many miles to the southwest, and also to the north, with patches of blue sky here and there.

The calm continued until 6 p. m., when the wind blew from the northwest with terrific force. Kempshot was then just outside the calm area, and this shows that the computed velocity of the center, its direction, and the diameter of the calm area, are as correct as possible.

I know but little of the further progress of this storm; at Windsor the wind blew with hurricane force from the southeast up to 4 p. m.; then came the calm, and afterwards at 8.05 p. m., the wind blew with hurricane force from the northwest. The steamship *Admiral Dewey* ran into it off St. Anns Bay that night, and it was finally reported to have taken the Windward Passage.

The conflict of the two cyclones from noon to 2 p. m., between Montego Bay and Kempshot will require much careful study. I have a most valuable series of notes from Cinnamon Hill, between Montego Bay and Falmouth, consisting of barometer readings and directions of the wind; but as Mr. Shore remarks, "at times it came from all sides—a strong gust from the north being followed by one from the east and south." I have not been able to use his notes in this preliminary report. It appears, however, that after cyclone B had passed eastward another cyclone (either A or C) passed westward, giving Cinnamon Hill and Kempshot northeast and east winds in squalls and gusts

JAMAICA, December 2, 1912.

#### A ST. LAWRENCE RIVER MIRAGE

[By Mr. DOUGLAS MANNING, Alexandria Bay, N. Y.]

A peculiar and interesting mirage occurs on the St. Lawrence River, and is seen during the spring and autumn months from the village of Alexandria Bay, N. Y., when cloudy skies prevail, and soon after northerly winds have set in and the weather is growing colder and "on the clear."

Looking northward from the village are several small islands, about 2 miles away, situated near the center of the river, which make a very pretty picture, covered with pine and cedar, and surrounded by the water, characteristically so blue. When such weather conditions prevail as mentioned above, these islands appear as though they were situated on a snow-covered ice field with the trees standing out in strong relief, giving the appearance of a dead calm prevailing in the immediate section. The effect is totally weird, for in reality the wind is strong and the water quite rough, for north winds blow against the river current.

The most interesting feature is that if one ascends a nearby bluff about 25 feet high, the illusion disappears entirely, and the islands, surrounded by the rough, blue waters, and the trees take on their natural look. Residents predict colder, clearing weather whenever the mirage appears, and of course it is a very good sign.

#### NOTE.

It will soon be proper to prepare a corrected and enlarged edition of the "Chronological Outline" published in the Monthly Weather Review in 1909, volume 37, pages 87-180. All observers and correspondents of the Weather Bureau are urgently requested to send Prof. Abbe of this bureau, such corrections, additions, and suggestions, as may be appropriate to this new edition.



## CONDENSED CLIMATOLOGICAL SUMMARY.

In the following table are given, for the various sections of the Climatological Service of the Weather Bureau, the average temperature and rainfall, the stations reporting the highest and lowest temperatures with dates of occurrence, the stations reporting the greatest and least monthly precipitation, and other data, as indicated by the several headings.

The mean temperatures for each section, the highest

and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperature and precipitation are based only on records from stations that have 10 or more years of observations. Of course the number of such records is smaller than the total number of stations.

## CONDENSED CLIMATOLOGICAL SUMMARY OF TEMPERATURE AND PRECIPITATION BY SECTIONS, NOVEMBER, 1912.

Temperature and precipitation, by sections, November, 1912.

Section.	Temperature (°F.).						Precipitation (inches and hundredths).					
	Section average.	Departure from the normal.	Monthly extremes.				Section average.	Departure from the normal.	Greatest monthly.		Least monthly.	
			Station.	Highest.	Date.	Station.	Lowest.	Date.	Station.	Amount.	Station.	Amount.
Alabama.....	50.7	- 3.6	2 stations.....	86	10†	Riverton.....	15	25†	Andalusia.....	7.10	Thomasville.....	0.45
Arizona.....	51.3	- 1.0	Sacaton.....	90	9	Fort Apache.....	- 2	22	Paradise.....	1.02	41 stations.....	0.00
Arkansas.....	50.5	- 0.2	Eldorado.....	89	11	Dutton.....	13	25	Calico Rock.....	4.20	Hot Springs.....	T.
California.....	52.2	- 0.7	Rialto (near).....	93	8	Tamarack.....	3	13	Branscomb.....	21.17	15 stations.....	0.00
Colorado.....	35.3	+ 0.9	2 stations.....	82	9	Fraser.....	-18	27†	Gladstone.....	1.66	3 stations.....	0.00
Florida.....	62.3	- 2.1	Orange City.....	92	14	2 stations.....	25	28†	Miami.....	10.67	Macleenny.....	0.58
Georgia.....	51.7	- 3.1	St. Marys.....	84	1	Diamond.....	16	29	Camak.....	5.13	Atlanta.....	1.05
Hawaii [October].....	73.7	.....	Mahukona.....	93	9†	Humuula.....	33	7†	Olaa Mill.....	31.29	Waipae Ranch.....	0.00
Idaho.....	38.0	+ 1.5	Hot Spring.....	72	9	Pierson.....	- 1	25	Grand Forks.....	6.31	Mackay.....	0.03
Illinois.....	42.8	+ 2.0	Golconda.....	78	11	Lanark.....	8	28	Clinton.....	4.00	2 stations.....	0.62
Indiana.....	42.8	+ 0.5	Hickory Hill.....	78	11	Huntingburg.....	10	28	Laporte.....	4.06	Greensburg.....	T.
Iowa.....	40.0	+ 4.1	Northboro.....	77	11	Inwood.....	6	24	Storm Lake.....	2.38	Rock Rapids.....	0.00
Kansas.....	45.4	+ 2.4	Irene.....	89	10	Irene.....	1	27	Densmore.....	2.85	3 stations.....	0.00
Kentucky.....	45.2	- 0.6	Greensburg.....	82	11	Loretto.....	10	28	Greensburg.....	2.30	Bowling Green.....	0.32
Louisiana.....	55.4	- 3.1	Reserve.....	91	12	Grand Cane.....	15	29	Pearl River.....	3.14	Napoleonville.....	0.00
Maryland and Delaware.....	46.3	+ 2.0	Portobello, Md.....	79	14	2 stations, Md.....	10	4†	Wilmington, Del.....	3.80	Great Falls, Md.....	0.68
Michigan.....	37.4	+ 1.6	Charlotte.....	75	12	Watersmeet.....	- 8	28	Harrisville.....	6.22	Iron River.....	0.65
Minnesota.....	33.9	+ 5.6	Lynd.....	75	10	Cloquet.....	- 6	28	Grand Meadow.....	1.97	Glencoe.....	0.00
Mississippi.....	52.0	- 3.0	3 stations.....	85	12	Charleston.....	17	28	Bay St. Louis.....	3.73	Pontotoc.....	0.30
Missouri.....	45.9	+ 1.8	Sublett.....	88	7	Houston.....	12	25	Fulton.....	4.27	Sublett.....	0.11
Montana.....	37.1	+ 5.9	Billings.....	71	9	Bowen.....	-10	29	Trout Creek.....	8.53	5 stations.....	0.00
Nebraska.....	41.3	+ 4.5	Curly.....	87	14	Mitchell.....	- 5	27	St. Libory.....	2.45	15 stations.....	0.00
Nevada.....	39.9	+ 0.5	Logan.....	78	9	Tecoma.....	3	23	Lewers Ranch.....	3.10	4 stations.....	0.00
New England.....	39.6	+ 2.2	New London, Conn.....	76	11	2 stations.....	5	19†	Millinocket, Me.....	6.34	Houlton, Me.....	0.95
New Jersey.....	45.3	+ 2.4	Woodbine.....	76	12	Indian Mills.....	11	29	Bergen Point.....	8.12	Bridgeton.....	2.02
New Mexico.....	40.8	- 1.5	Lakewood.....	87	9	Elizabethtown.....	- 6	27	Newman.....	1.75	53 stations.....	0.00
New York.....	40.5	+ 3.1	De Ruyter.....	76	6	2 stations.....	- 4	28†	Canton.....	6.50	Avon.....	0.76
North Carolina.....	48.1	- 1.3	Fayetteville.....	86	12	.....do.....	4	29	Highlands.....	4.43	Belhaven.....	0.95
North Dakota.....	31.8	+ 5.5	2 stations.....	70	9†	.....do.....	1	2†	Pembina.....	0.70	5 stations.....	0.00
Ohio.....	42.2	+ 1.5	Demos.....	82	6	Bladensburg.....	8	25	Conneaut.....	3.08	Haydenville.....	0.24
Oklahoma.....	49.6	- 0.5	Snyder.....	86	10†	Goodwell.....	6	27	North Muskogee.....	2.99	Chattanooga.....	0.00
Oregon.....	42.6	+ 0.6	Alpine.....	73	19	Seneca.....	2	29	Glenora.....	23.29	Buena Vista.....	0.05
Pennsylvania.....	43.0	+ 2.7	Franklin.....	81	7	Montrose.....	7	28	Shawmont.....	4.83	Beaver Falls.....	0.61
Porto Rico.....	76.9	+ 0.3	Arecibo.....	97	18	Maricao.....	55	5†	Yabucoa.....	21.52	Arecibo.....	4.20
South Carolina.....	52.1	- 1.8	2 stations.....	84	7†	Greenville.....	17	29	Trenton.....	5.44	Effingham.....	0.50
South Dakota.....	38.3	+ 6.5	Murdo.....	88	10	Stephan.....	- 4	24	Oelrichs.....	0.75	30 stations.....	0.00
Tennessee.....	46.1	- 2.3	Ferryville.....	80	1	Mountain City.....	1	29	Florence.....	2.97	Ashwood.....	0.25
Texas.....	55.7	- 1.1	2 stations.....	90	14†	2 stations.....	7	27	Boerne.....	3.84	14 stations.....	0.00
Utah.....	37.6	+ 0.1	Fillmore.....	75	9	Strawberry (East).....	- 6	1	Clarkston.....	3.55	Low.....	0.00
Virginia.....	46.5	+ 0.6	Onancock.....	81	1	Mountain Lake.....	0	29	Warsaw.....	4.96	2 stations.....	1.50
Washington.....	41.6	+ 1.0	Lone Tree.....	69	23	Colville Forest sta.....	10	26	Quinault.....	24.08	Wahluke.....	0.73
West Virginia.....	42.8	0.0	3 stations.....	78	1†	2 stations.....	2	29	Pickens.....	4.08	Wheeling.....	0.63
Wisconsin.....	35.6	+ 2.8	Racine (3).....	69	11	Long Lake (3).....	- 3	28	Plum Island.....	3.65	New Richmond.....	0.05
Wyoming.....	33.3	+ 2.4	Wyncoote.....	84	9	Foxpark.....	-19	27	Alta.....	4.33	Basin (4).....	0.00

† Other dates also.



TABLE I.—Climatological data for United States Weather Bureau stations, November, 1912.

Districts and stations.	Elevation of instruments.			Pressure in inches.		Temperature of the air, in degrees Fahrenheit.										Precipitation, inches.			Wind.					Average cloudiness, tenths.	Total snowfall.	Snow on ground at end of month.						
	Barometer above sea level, feet.	Thermometer above ground.	Anemometer above ground.	Station, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean max. + mean min. + 2.	Departure from normal.	Maximum.	Date.	Mean minimum.	Greatest daily range.	Mean wet thermometer.	Mean temperature of the dew point.	Mean relative humidity, per cent.	Total.	Departure from normal.	Days with 0.01, or more.	Total movement, miles.	Prevailing direction.	Miles per hour.	Direction.	Date.				Clear days.	Partly cloudy days.	Cloudy days.			
New England.																																
Eastport.....	76	67	85	29.85	29.94	-.08	38.8	+ 2.0	60	7	45	21	17	33	25	36	32	80	2.86	- 1.2	12	9,766	sw.	60	ne.	25	3	12	15	7.1	2.0	T.
Greenville.....	1,070	6	6	28.74	29.94	-.07	32.2	+ 2.1	58	6	39	10	17	26	26	32	32	71	4.17	- 0.2	10	7,486	sw.	50	e.	25	11	9	10	5.4	14.5	T.
Portland, Me.....	103	81	117	29.84	29.97	-.07	39.7	+ 2.6	61	5	47	20	29	33	25	35	30	71	3.58	- 0.2	8	7,486	sw.	50	e.	25	11	9	10	5.4	14.5	T.
Concord.....	288	70	79	29.65	29.97	-.09	39.4	+ 2.6	68	12	49	17	4	30	37	25	35	71	3.74	+ 0.4	7	4,363	nw.	32	ne.	24	7	10	13	6.0		
Burlington.....	404	11	48	29.50	29.95	-.10	37.2	+ 3.5	62	6	43	14	4	31	25	32	32	71	3.51	+ 0.9	11	9,705	s.	46	s.	1	4	8	17	7.2		
Northfield.....	876	12	60	29.00	29.97	-.08	34.8	+ 2.8	66	6	44	5	29	26	38	32	29	82	3.56	+ 1.0	10	5,731	s.	32	s.	1	3	9	18	7.6	9.2	4.0
Boston.....	125	115	188	29.84	29.98	-.07	45.6	+ 4.4	70	12	53	24	29	38	24	40	34	68	2.61	- 1.5	7	8,564	w.	43	e.	24	13	4	13	5.4	0.3	
Nantucket.....	12	14	90	29.97	29.98	-.07	47.2	+ 2.0	65	7	53	29	29	42	19	45	44	91	2.94	- 0.3	10	12,859	w.	62	ne.	28	12	8	10	5.8	T.	
Block Island.....	26	11	46	29.96	29.99	-.07	47.4	+ 2.1	64	7	52	30	29	43	18	43	39	73	3.18	- 0.7	6	15,627	sw.	56	w.	25	13	4	13	6.1	0.8	
Narragansett.....	160	141	165	29.82	30.00	-.07	44.2	+ 1.9	73	12	52	19	29	36	29	40	35	74	2.81	- 1.1	9	6,606	nw.	39	se.	7	12	7	11	5.1	2.2	T.
Providence.....	159	122	140	29.82	30.00	-.08	44.1	+ 1.6	70	12	52	22	29	36	28	38	33	70	3.53	- 0.3	8	6,087	nw.	35	se.	24	7	12	11	6.2	0.5	
Hartford.....	166	116	155	29.89	30.01	-.06	44.9	+ 3.6	72	12	52	24	29	37	25	40	34	68	3.37	- 0.2	6	6,993	sw.	42	se.	7	12	8	10	5.2	1.7	
New Haven.....	106	122	155	29.89	30.01	-.06	44.9	+ 3.6	72	12	52	24	29	37	25	40	34	68	3.37	- 0.2	6	6,993	sw.	42	se.	7	12	8	10	5.2	1.7	
Middle Atlantic States.																																
Albany.....	97	102	115	29.88	29.99	-.09	41.6	+ 3.2	66	12	49	21	29	34	29	37	33	74	2.08	- 0.7	7	5,423	s.	29	se.	13	13	5	12	5.8	T.	
Binghamton.....	871	78	88	29.05	29.99	-.10	41.4	+ 3.8	68	11	49	19	29	34	30	40	33	62	3.08	+ 0.8	8	4,580	w.	26	s.	13	3	11	16	7.2	13.0	1.0
New York.....	365	414	454	29.68	30.02	-.07	46.6	+ 2.6	71	12	53	27	29	40	20	40	33	62	2.21	- 1.2	6	14,886	nw.	60	nw.	25	12	10	8	5.0	0.8	
Harrisburg.....	374	94	104	29.67	30.07	-.04	45.8	+ 4.1	71	12	53	27	29	39	27	39	32	63	1.55	- 0.8	4	4,821	nw.	26	w.	25	6	15	9	5.8	T.	
Philadelphia.....	117	123	184	29.93	30.06	-.04	48.5	+ 3.6	74	12	56	29	29	41	25	43	38	72	3.21	+ 0.2	7	7,124	sw.	29	nw.	9	8	15	7	5.6	0.3	
Scranton.....	805	111	119	29.16	30.04	-.05	43.0	+ 3.9	68	6	51	23	29	35	30	39	34	75	3.75	+ 1.5	9	5,456	s.	34	sw.	1	4	13	13	6.7	8.4	0.5
Atlantic City.....	52	37	48	30.01	30.07	-.03	47.8	+ 2.3	75	12	55	22	29	41	26	43	38	71	2.86	- 0.4	4	6,237	nw.	37	s.	7	14	6	10	4.4	4.0	
Cape May.....	18	13	49	30.07	30.09	-.01	49.2	+ 1.8	72	12	55	30	28	43	25	44	39	73	2.74	- 0.5	4	7,303	sw.	44	se.	7	12	13	5	4.5	4.5	T.
Baltimore.....	123	100	113	29.95	30.03	-.03	48.6	+ 2.8	76	12	57	28	29	41	27	42	36	66	1.93	- 1.0	5	4,420	sw.	27	sw.	25	11	12	7	5.0	0.5	
Washington.....	112	62	85	29.96	30.08	-.04	46.9	+ 1.9	77	12	57	25	29	37	36	39	33	66	1.54	- 1.2	5	4,925	nw.	31	nw.	25	13	8	9	4.9	0.6	
Lynchburg.....	681	83	88	29.36	30.12	-.01	47.4	+ 1.3	79	12	59	23	29	36	38	40	34	70	2.72	- 0.1	5	2,951	nw.	34	nw.	8	11	13	6	4.9	1.0	T.
Mount Weather.....	1,725	10	54	28.21	30.06	-.06	43.5	+ 3.1	69	12	50	23	29	37	31	37	30	61	2.49	- 0.4	5	14,578	nw.	65	nw.	25	8	14	8	5.3	0.4	
Norfolk.....	91	102	111	30.02	30.12	-.01	51.6	+ 0.4	77	12	60	29	29	43	28	44	39	68	1.96	- 0.8	4	6,289	s.	33	sw.	28	20	5	5	3.1	0.5	
Richmond.....	144	189	197	29.96	30.12	-.00	48.2	+ 0.6	78	12	60	29	29	37	36	40	34	67	1.73	- 0.7	5	5,463	s.	38	sw.	13	15	11	4	3.8	2.0	
Wytheville.....	2,293	40	47	27.73	30.17	-.04	41.1	+ 1.9	68	13	52	12	29	30	41	35	30	74	1.74	- 1.3	7	5,001	w.	34	nw.	8	20	6	4	2.8	2.1	T.
South Atlantic States.																																
Asheville.....	2,255	53	75	27.79	30.21	+.07	43.1	- 2.0	75	12	55	12	29	31	39	36	30	65	2.00	- 1.2	5	6,121	nw.	29	nw.	9	18	5	7	3.6	2.2	T.
Charlotte.....	773	68	76	29.31	30.16	+.03	49.8	- 0.6	77	11	61	26	29	39	36	41	34	62	1.90	- 1.0	6	4,351	sw.	25	w.	24	18	6	6	3.4	1.3	
Hatteras.....	11	12	47	30.11	30.12	-.01	55.5	- 1.2	75	1	62	26	29	49	21	50	46	75	3.04	- 1.6	6	10,962	n.	66	nw.	28	20	3	7	3.1	T.	
Manteo.....	12	12	46	30.11	30.12	-.01	51.6	- 1.2	75	13	63	28	27	41	32	42	33	57	2.68	- 1.9	6	5,532	sw.	30	nw.	9	19	8	3	3.0	3.1	
Raleigh.....	376	103	110	29.73	30.15	+.02	50.9	+ 0.7	79	12	61	25	29	41	32	42	33	57	2.35	- 0.0	4	5,532	sw.	30	nw.	9	19	8	3	3.0	3.1	
Wilmington.....	78	81	91	30.07	30.16	+.04	53.8	- 0.3	78	12	64	29	29	43	31	46	41	71	1.39	- 1.1	5	4,876	w.	30	s.	7	20	7	3	2.6	1.0	
Charleston.....	48	11	92	30.11	30.16	+.04	56.5	- 1.6	81	1	65	34	29	48	26	49	43	70	1.30	- 1.6	6	7,205	n.	36	e.	5	18	6	3	2.6		
Columbia, S. C.....	351	41	57	29.78	30.18	+.06	52.2	- 1.6	78	12	64	28	29	40	36	43	35	60	2.41	+ 0.2	6	4,076	n.	25	sw.	13	21	7	2	2.5	1.0	
Augusta.....	180	89	97	29.98	30.18	+.05	52.8	- 1.1	78	12	65	28	29	40	36	44	41	76	3.54	+ 0.6	5	3,856	w.	26	w.	24	21	6	3	2.5	T.	
Savannah.....	65	150	194	30.10	30.17	+.05	57.0	- 0.5	79	12	66	33	28	48	26	49	43	68	1.18	- 1.2	7	8,211	nw.	36	w.	24	17	8	5	3.5		
Jacksonville.....	43	96	129	30.11	30.16	+.06	59.6	- 1.7	84	1	69	37	28	50	28	53	50	80	0.82	- 1.4	8	6,197	n.	28	s.	7	14	10	6	3.9		
Florida Peninsula.																																
Key West.....	22	10	53	30.02	30.04	+.02	72.7	- 1.6	84	1	77	58	28	69	17	68	66	82	1.17	- 1.2	4	7,716	n.	39	n.	28	15	8	7	4.8		
Miami.....	25	37	72	30.04	30.06	+.02	71.5	- 0.5	88	1	78	52	28	66	23	65	62	76	10.67	+ 8.1	7	9,014	ne.	33	ne.	4	5	14	11	6.2		
Sand Key.....	23	39	72	30.00	30.03	+.01	72.8	- 0.8	81	1	76	58	28	70	18	68	65	77	0.95	- 0.95	5	15,097	ne.	54	nw.	28	18	7	5	4.1		
Tampa.....	35	79	96	30.09	30.12	+.04	64.5	- 0.9	83	1	74	43	28	56	28	57	53	75	2.40	+ 0.7	7	6,276	ne.	34	nw.	28	21	3				



TABLE I.—Climatological data for United States Weather Bureau stations, November, 1912—Continued.

Districts and stations.	Elevation of instruments.		Pressure in inches.		Temperature of the air, in degrees Fahrenheit.										Precipitation, inches.		Wind.				Average cloudiness, tenths.	Total snowfall.	Snow on ground at end of month.										
	Barometer above sea level, feet.	Thermometer above ground.	Anemometer above ground.	Station, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean max. + mean min. + 2.		Departure from normal.	Maximum.	Date.	Mean minimum.	Date.	Mean maximum.	Greatest daily range.	Mean wet thermometer.	Mean temperature of dew point.	Mean relative humidity, per cent.	Total.	Departure from normal.				Days with 0.01, or more.	Total movement, miles.	Prevailing direction.							
							Maximum velocity.																			Miles per hour.	Direction.	Date.					
							Clear days.	Partly cloudy days.																					Cloudy days.				
Lower Lake Region.																																	
Buffalo	767	178	206	29.14	29.98	-.07	42.5	+ 3.2	65	6	48	25	28	37	23	39	36	80	2.68	- 0.7	10	15,989	sw.	72	sw.	1	5	8	17	6.8	4.4	...	
Canton	448	10	71	29.46	29.95	.....	35.9	+ 2.0	64	6	43	0	28	29	31	38	33	75	6.50	+ 3.1	13	9,580	sw.	66	sw.	1	5	7	18	7.3	26.1	10.0	
Oswego	335	76	91	29.59	29.97	.....	41.9	+ 2.8	68	6	48	21	29	36	22	38	33	75	3.43	0.0	14	8,949	sw.	40	sw.	1	6	7	17	7.1	4.2	...	
Rochester	523	86	102	29.41	30.00	-.05	41.8	+ 3.9	67	6	48	21	28	35	23	37	32	74	2.57	+ 0.2	14	6,753	sw.	47	sw.	1	6	8	16	6.8	7.2	0.7	
Syracuse	597	97	113	29.33	29.99	-.07	41.9	+ 3.2	68	6	48	21	29	36	23	37	32	74	2.95	+ 0.2	14	9,350	sw.	46	s.	1	3	10	17	7.4	8.6	0.5	
Erie	714	92	102	29.23	30.01	-.05	43.7	+ 2.6	69	6	49	27	28	38	25	39	35	75	2.17	+ 1.4	12	10,310	sw.	36	s.	1	4	4	22	7.6	15.3	2.7	
Cleveland	762	190	201	29.21	30.04	-.03	43.6	+ 3.2	68	6	50	26	28	37	23	38	34	73	0.89	- 1.9	12	12,710	s.	50	w.	9	8	7	15	6.4	1.3	...	
Sandusky	629	62	70	29.36	30.05	-.02	43.0	+ 2.2	70	11	50	23	28	36	23	37	33	72	0.79	- 2.0	7	7,241	sw.	28	nw.	1	5	9	16	6.9	0.5	...	
Toledo	628	208	246	29.35	30.05	-.02	42.0	+ 2.3	70	11	50	23	28	34	23	37	32	72	1.77	- 0.9	10	12,547	sw.	48	sw.	13	12	7	11	5.4	0.1	...	
Fort Wayne	856	113	124	29.12	30.07	.....	41.8	+ 1.2	71	11	49	20	28	34	26	37	32	75	1.23	.....	8	8,595	sw.	33	w.	13	12	4	14	5.7	0.5	...	
Detroit	730	218	256	29.21	30.02	-.04	40.4	+ 1.8	65	11	47	22	28	34	21	37	33	78	1.80	- 0.8	9	10,384	w.	46	w.	13	7	8	15	6.7	0.1	...	
Upper Lake Region.																																	
Alpena	609	13	92	29.29	29.96	-.05	35.2	+ 1.5	60	11	42	13	28	29	24	33	30	84	3.22	+ 0.7	13	8,896	sw.	42	se.	23	2	11	17	7.3	12.7	T.	
Escanaba	612	48	82	29.29	29.98	-.05	34.7	+ 3.0	53	5	41	13	28	29	25	31	28	77	0.76	- 1.5	7	8,315	nw.	48	ne.	24	7	9	14	6.5	2.1	T.	
Grand Haven	632	54	92	29.30	29.99	-.05	40.4	+ 2.4	61	12	46	24	28	35	20	38	35	80	2.97	+ 0.4	14	10,981	w.	52	w.	23	7	8	15	6.7	2.0	...	
Grand Rapids	675	70	87	29.22	30.00	-.05	40.5	+ 2.4	67	11	47	25	28	34	25	37	34	83	2.69	+ 0.2	10	4,990	s.	28	w.	8	7	9	14	6.3	7.1	...	
Lansing	863	11	62	29.04	30.00	.....	38.6	+ 1.8	67	11	46	19	28	31	29	35	32	83	2.86	+ 0.4	11	5,664	sw.	25	sw.	13	9	5	16	6.4	6.2	...	
Houghton	684	62	72	29.25	29.96	-.06	34.3	+ 2.8	55	10	40	13	28	29	35	32	80	1.64	- 1.2	9	6,553	nw.	37	w.	29	3	11	16	7.3	13.2	1.8		
Marquette	734	77	111	29.16	29.98	-.04	35.8	+ 3.9	63	10	42	14	28	30	27	32	29	79	1.25	- 1.5	10	8,151	nw.	42	s.	3	2	9	19	7.6	8.3	3.2	
Port Huron	638	78	120	29.28	29.99	-.05	39.2	+ 2.4	64	11	46	21	28	33	24	36	32	80	1.68	- 1.0	9	9,453	sw.	37	nw.	1	4	10	16	6.9	0.3	...	
Sault Ste. Marie	614	11	61	29.26	29.97	-.04	33.0	+ 2.3	54	5	39	10	28	27	22	31	28	82	1.28	- 1.6	13	6,805	se.	39	w.	16	3	6	21	8.1	9.2	3.0	
Chicago	823	140	310	29.15	30.05	-.02	42.8	+ 3.6	70	11	49	25	28	36	20	38	33	68	1.45	- 1.0	7	11,052	sw.	40	w.	8	12	10	8	5.0	0.4	...	
Green Bay	681	119	133	29.26	30.01	-.04	40.0	+ 3.9	67	11	46	22	28	34	21	35	30	71	1.65	- 0.3	6	7,763	sw.	36	nw.	24	10	8	12	5.3	0.7	...	
Millwaukee	617	49	86	29.31	29.98	-.06	37.2	+ 4.7	62	11	44	19	28	31	23	32	29	78	1.15	- 0.8	5	9,912	s.	54	n.	24	4	10	16	7.3	1.0	...	
Duluth	1,133	11	47	28.74	30.00	-.04	32.0	+ 2.7	58	10	40	6	27	24	26	28	24	75	0.21	- 1.4	4	9,234	w.	50	w.	20	6	14	10	6.0	1.8	0.3	
North Dakota.																																	
Moorhead	940	8	57	29.00	30.04	-.03	32.4	+ 8.0	64	10	42	14	2	23	37	28	26	83	0.05	- 0.9	2	5,830	s.	28	nw.	20	12	7	11	5.1	0.4	...	
Bismarck	1,674	4	57	28.23	30.07	-.00	33.9	+ 7.9	59	19	44	10	24	24	32	28	25	77	0.7	- 0.7	0	5,899	nw.	44	nw.	22	12	11	7	5.0	T.	...	
Devils Lake	1,482	11	44	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.09	- 0.6	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.0	T.	...
Williston	1,896	40	47	27.97	30.00	-.06	35.2	+ 10.0	67	9	46	12	27	24	31	29	25	75	0.14	- 0.5	1	4,987	sw.	40	nw.	22	7	18	5	5.5	1.0	...	
Upper Mississippi Valley.																																	
Minneapolis	918	102	208	29.08	30.01	-.05	37.5	+ 6.1	61	10	46	16	28	29	32	32	25	64	0.08	- 1.1	3	8,687	w.	37	n.	22	9	13	8	4.8	1.0	...	
St. Paul	940	203	212	29.08	30.01	-.05	37.0	+ 6.1	60	10	46	13	28	28	33	32	25	64	0.08	- 1.2	4	9,203	nw.	40	s.	30	10	14	6	4.6	0.7	...	
La Crosse	714	11	48	29.26	30.05	-.02	38.4	+ 4.6	65	11	48	13	28	29	30	30	26	64	0.90	- 0.6	2	3,906	s.	21	s.	28	10	4	16	5.9	0.1	...	
Madison	974	70	78	28.96	30.04	-.02	38.6	+ 4.4	64	11	46	15	28	31	22	34	30	76	0.89	- 0.9	4	7,906	sw.	40	ne.	12	11	9	10	5.3	0.2	...	
Charles City	1,015	10	49	28.95	30.06	-.02	37.4	+ 4.4	65	10	49	13	28	26	34	32	28	77	0.64	- 0.8	1	5,550	nw.	28	s.	7	7	14	9	5.6	T.	...	
Davenport	606	71	79	29.40	30.07	-.01	42.3	+ 4.8	71	11	52	20	28	33	26	36	32	71	0.98	- 0.8	4	5,667	sw.	29	nw.	8	9	15	6	4.7	T.	...	
Des Moines	861	84	101	29.14	30.07	-.02	43.0	+ 6.2	70	10	53	21	2	33	31	36	30	67	1.11	- 0.4	3	5,756	sw.	30	nw.	23	15	11	4	4.0	0.2	...	
Dubuque	698	81	96	29.30	30.07	-.00	40.6	+ 4.6	68	11	50	17	28	32	29	35	29	69	1.51	- 0.3	5	4,885	s.	24	n.	24	7	15	8	5.7	0.1	...	
Keokuk	614	64	78	29.42	30.11	-.02	44.4	+ 5.0	74	11	54	21	25	35	27	38	33	73	1.81	0.0	4	6,462	s.	35	nw.	23	15	12	3	3.2	T.	...	
Cairo	350	87	93	29.79	30.18	-.06	48.5	+ 1.6	75	10	57	26	28	40	27	42	36	69	0.62	- 3.4	3	6,595	s.	29	w.	24	16	8	6	3.7	...	...	
La Salle	536	56	64	29.50	30.09	-.01	41.8	+ 6.0	70	11	51	19	28	33	27	36	32	77	1.54	- 1.1	5	6,305	sw.	31	sw.	4	11	13	6	4.7	0.1	...	
Peoria	609	11	45	29.42	30.10	-.01	41.8	+ 4.3	72	11	51	20	28	32	27	36	32	77	1.56	- 1.1	6	6,089	s.	30	sw.	4	10	11	9	5.0	T.	...	
Springfield, Ill.	644	10	91	29.42	30.12	-.02	43.4	+ 2.7	73	11	52	22	28	35	25	37	32	69	1.48	- 1.2	4	7,054	s.	33	nw.	23	12	6	4	4.1	T.	...	
Hannibal	534	74	109	29.53	30.11	-.02	44.4	+ 3.9	75	10	55	21	25	34	21	35	31	63	2.16	+ 0.2	4	7,966	sw.	36	sw.	4	17	9	4	3.4	T.	...	
St. Louis	567	208	317	29.52	30.13	-.03	47.4	+ 4.0	76																								



TABLE I.—Climatological data for United States Weather Bureau stations, November, 1912—Continued.

Districts and stations.	Elevation of instruments.			Pressure in inches.			Temperature of the air, in degrees Fahrenheit.										Precipitation, inches.			Wind.					Average cloudiness, tenths.	Total snowfall.	Snow on ground at end of month.				
	Barometer above sea level, feet.	Thermometer above ground.	Anemometer above ground.	Station, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean max. + mean min. + 2.	Departure from normal.	Maximum.	Date.	Mean minimum.	Date.	Mean minimum.	Greatest daily range.	Mean wet thermometer.	Mean temperature of the dew point.	Mean relative humidity, per cent.	Total.	Departure from normal.	Days with 0.01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity.								
																							Miles per hour.	Direction.				Date.			
Southern Slope.							50.6 - 0.4										60			0.47 - 0.8						3.1					
Abilene.....	1,738	10	52	28.36	30.19	+ .12	53.9 + 1.3	82	7	67	28	2	41	39	42	33	55	0.33	- 0.9	2	7,125	s.	39	s.	11	20	4	6	3.0		
Amarillo.....	3,676	10	49	26.38	30.17	+ .12	46.9 + 3.1	78	10	62	13	27	32	42	36	28	60	0.02	- 1.1	1	8,917	sw.	42	sw.	11	24	5	1	2.8	0.2	
Del Rio.....	944	8	57	29.18	30.18	+ .13	56.2 - 3.1	81	7	69	29	28	43	40	36	30	56	1.09	- 0.7	5	4,672	se.	30	n.	27	16	8	6	3.6		
Roswell.....	3,578	9	57	26.50	30.18	+ .15	45.2 - 2.9	78	7	62	15	28	28	49	36	29	64	0.43	- 0.7	2	4,206	n.	37	ne.	26	22	4	4	3.0		
Southern Plateau.							49.1 + 0.2										47			0.17 - 0.4						2.2					
El Paso.....	3,762	110	133	26.31	30.13	+ .13	49.3 - 1.6	80	10	62	26	28	36	38	39	28	51	0.80	+ 0.2	4	6,237	nw.	51	ne.	16	21	6	3	2.3		
Santa Fe.....	7,013	8	56	23.34	30.19	+ .16	39.2 + 1.0	64	8	51	8	27	28	31	28	17	47	0.03	- 0.8	2	4,818	n.	27	nw.	11	21	8	1	2.5	0.2	
Flagstaff.....	6,907	8	57	26.34	30.14	+ .16	36.9 + 2.3	64	9	52	13	12	22	47	38	46	33	0.13	- 0.2	3	4,818	e.	40	ne.	21	22	2	6	2.5	0.8	
Phoenix.....	1,108	50	56	28.88	30.04	+ .06	59.8 + 1.1	85	9	75	39	27	45	38	46	33	41	0.00	- 1.0	0	2,669	e.	18	sw.	10	22	2	6	2.5		
Yuma.....	141	9	58	29.88	30.03	+ .05	63.2 + 1.3	86	9	78	43	25	48	36	49	36	42	0.00	- 0.3	0	4,798	n.	35	n.	16	27	1	2	0.9		
Independence.....	3,910	11	42	26.12	30.17	+ .12	46.0 - 3.2	75	9	62	22	23	31	42	37	28	56	0.00	- 0.3	0	4,406	nw.	33	n.	19	22	5	3	2.8		
Middle Plateau.							40.0 + 0.9										61			3.97 - 0.3						3.6					
Reno.....	4,532	56	63	25.58	30.18	+ .07	42.4 + 1.4	65	8	56	20	25	28	39	35	27	61	0.10	- 1.0	3	3,968	w.	44	s.	9	16	7	7	4.0	T.	
Tonopah.....	6,090	12	20	24.17	30.14	+ .06	42.5 - 1.6	62	9	50	23	21	35	25	33	21	43	0.10	- 0.8	1	6,677	se.	37	nw.	19	19	8	3	2.9	1.0	
Winnamucca.....	4,344	18	56	25.73	30.20	+ .06	39.6 + 2.1	66	9	54	15	24	25	41	32	26	68	0.92	+ 0.2	5	4,449	ne.	44	sw.	9	12	6	12	5.2	0.3	
Modena.....	5,479	10	43	24.73	30.18	+ .10	38.2 - 0.8	64	8	52	16	22	24	40	31	25	67	0.29	- 0.3	3	5,377	w.	36	ne.	20	25	2	3	2.2	T.	
Salt Lake City.....	4,360	147	189	25.76	30.19	+ .07	42.7 + 2.3	70	9	51	26	27	34	26	36	30	64	1.70	+ 0.3	8	4,205	se.	36	sw.	10	14	9	4	4.9	2.5	2.0
Durango.....	6,546	18	56	23.76	30.20	+ .14	37.6 + 0.4	64	9	52	16	28	23	38	28	21	61	0.40	- 0.7	3	3,888	nw.	26	ne.	26	19	8	3	2.7	0.7	T.
Grand Junction.....	4,602	43	51	25.54	30.19	+ .11	39.7 - 0.2	61	9	52	18	28	28	32	32	26	66	0.46	- 0.1	4	2,538	se.	18	sw.	11	20	6	4	3.1	0.4	0.4
Northern Plateau.							41.7 + 3.1										70			1.15 - 0.2						7.3					
Baker.....	3,466	48	53	26.53	30.17	+ .01	38.8 + 3.9	61	9	48	17	26	30	25	34	28	67	0.23	- 1.0	8	5,311	se.	27	se.	9	7	7	16	5.9	0.2	
Boise.....	2,739	78	86	27.30	30.21	+ .04	43.0 + 3.4	68	9	51	24	29	35	27	37	31	66	0.88	0.0	7	3,930	nw.	27	s.	1	5	8	17	6.8	T.	
Lewiston.....	757	10	51	29.30	30.13	+ .01	42.9 + 2.0	60	9	50	28	26	36	25	33	25	68	0.80	- 0.5	12	3,020	e.	41	w.	9	0	4	26	8.8	T.	
Pocatello.....	4,477	46	54	25.60	30.20	+ .06	39.9 + 3.6	62	9	49	14	27	31	32	34	29	70	0.95	+ 0.4	7	6,740	se.	33	s.	9	7	13	10	5.9	T.	
Spokane.....	1,929	101	110	28.02	30.11	+ .01	40.2 + 2.9	58	18	46	21	26	35	21	37	34	78	2.29	0.0	14	4,209	sw.	24	s.	21	1	6	23	8.5	0.3	T.
Walla Walla.....	1,045	107	115	29.02	30.10	+ .03	45.5 + 2.6	68	8	53	26	1	38	31	40	35	71	1.77	- 0.4	12	5,332	s.	33	s.	21	5	5	20	7.8	T.	
N. Pac. Coast Region.							46.2 + 1.1										88			7.56 + 0.3						8.3					
North Head.....	211	11	56	29.79	30.02	+ .03	48.0 + 0.3	57	16	51	40	25	45	11	47	45	89	9.79	+ 3.5	21	14,297	se.	76	se.	12	2	5	23	8.2		
Port Crescent.....	259	8	53	29.70	29.99	+ .01	42.3 + 0.0	56	20	49	30	28	36	22	44	42	84	6.07	- 1.4	22	3,361	s.	26	s.	20	0	4	26	9.0		
Seattle.....	205	215	250	29.92	30.05	+ .01	46.2 + 1.7	61	1	51	35	26	42	16	44	42	84	6.82	+ 1.0	21	7,147	se.	37	s.	20	0	6	24	8.7		
Tacoma.....	213	113	120	29.82	30.05	+ .01	45.4 + 1.3	61	12	51	31	26	40	19	44	42	87	7.89	- 0.6	20	4,285	sw.	27	sw.	12	1	6	23	8.4		
Tatoosh Island.....	109	7	57	29.85	29.95	+ .02	47.4 + 1.5	61	16	51	39	29	44	12	46	45	93	11.43	- 0.7	24	14,449	e.	84	s.	12	1	9	20	8.2		
Portland, Oreg.....	153	68	106	29.90	30.06	+ .04	47.1 + 1.5	61	12	52	31	28	42	15	45	43	86	5.77	- 0.7	18	4,598	se.	36	sw.	6	3	5	22	8.1		
Roseburg.....	510	9	57	29.54	30.10	+ .02	46.8 + 1.2	69	8	53	29	21	40	27	44	42	86	5.16	+ 0.8	17	1,958	s.	25	s.	8	0	10	20	7.7		
M. Pac. Coast Region.							53.5 + 0.5										78			2.64 - 0.4						5.1					
Eureka.....	80	73	89	30.05	30.12	+ .01	52.4 + 1.4	71	18	58	38	20	46	30	50	49	88	6.86	+ 1.2	17	4,902	se.	33	sw.	9	7	7	16	7.3		
Mount Tamalpais.....	2,375	11	18	27.65	30.14	+ .05	51.6 + 1.0	70	22	57	38	30	47	23	46	40	72	4.87	+ 1.2	9	13,222	sw.	66	nw.	19	14	6	10	4.6		
Point Reyes Light.....	490	7	18	29.57	30.09	+ .02	55.8 + 2.8	70	17	60	45	29	52	16	44	42	84	1.70	- 0.8	8	10,666	s.	60	nw.	19	13	5	12	5.0		
Red Bluff.....	332	50	56	29.76	30.13	+ .02	52.3 - 1.1	74	24	60	36	29	44	29	48	44	77	2.42	- 0.8	9	3,533	nw.	23	se.	9	13	4	13	5.3		
Sacramento.....	69	106	117	30.07	30.14	+ .05	52.4 - 1.0	67	18	61	35	23	44	26	48	44	75	0.80	- 1.4	7	4,559	se.	28	nw.	20	14	6	10	4.6		
San Francisco.....	155	200	204	29.96	30.13	+ .04	56.6 + 1.1	68	24	62	46	29	51	19	52	48	78	1.94	- 0.5	9	3,659	nw.	27	sw.	6	12	5	13	5.1		
San Jose.....	141	12	110	29.98	30.13	+ .05	53.6 - 0.8	80	18	66	31	22	41	43	36	30	89	0.29	- 1.6	5	3,692	nw.	22	nw.	19	17	7	6	3.5		
Southeast Farallon.....	30	9	17	30.09	30.12	+ .03	55.3 - 0.8	63	17	58	48	28	53	10	44	42	86	1.33	- 1.2	9	7,960	nw.	41	nw.	19	13	5	12	5.1		
S. Pac. Coast Region.							60.0 + 2.9										60			2.39 - 0.6						2.8					
Fresno.....	330	62	70	29.77	30.14	+ .08	55.2 + 0.6	80	8	68	36	23	43	33	48	41	65	0.85	- 0.2	2	2,616	nw.	30	w.	19	19	8	3	2.8		
Los Angeles.....	338	159	191	29.69	30.06	+ .04	65.1 + 6.7	86	23	76	47	9	54	33	50	37	46	0.35	- 1.1	4	4,459	ne.	24	n.	20	19	7	4	2.7		
San Diego.....	87	94	102	29.95	30.04	+ .02	61.2 + 2.2	86	16	70	45	9	52	31	53	48	69	0.40	- 0.4	6	3,685	nw.	24	nw.							



TABLE II.—Accumulated amounts of precipitation for each 5 minutes, for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes, or 0.80 in 1 hour, during November, 1912, at all stations furnished with self-registering gages.

Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive rate began.	Depths of precipitation (in inches) during periods of time indicated.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
Abilene, Tex.	21			0.32																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										</



TABLE II.—Accumulated amounts of precipitation for each 5 minutes, for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes, or 0.80 in 1 hour, during November, 1912, at all stations furnished with self-registering gages—Continued.

Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive rate began.	Depths of precipitation (in inches) during periods of time indicated.														
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.	
Miami, Fla.	13-14	5.55 p. m.	D. N. a. m.	1.77	8.25 p. m.	8.59 p. m.	.59	.12	.22	.29	.38	.45	.55	.65								
Do.	21	D. N. a. m.	6.15 p. m.	7.66	12.17 p. m.	1.07 p. m.	2.46	.19	.43	.60	.74	.88	.96	1.08	1.17	1.24	1.40					
Do.					1.07 p. m.	1.57 p. m.		1.50	1.55	1.63	1.75	1.87	1.98	2.05	2.19	2.39	2.49					
Do.					1.57 p. m.	2.47 p. m.		2.65	2.81	2.94	2.99	3.04	3.12	3.21	3.33	3.41	3.49					
Do.					2.47 p. m.	3.37 p. m.		3.60	3.70	3.75	3.89	3.99	4.09	4.12	4.17	4.22	4.30					
Do.					3.37 p. m.	3.57 p. m.		4.41	4.59	4.63	4.71											
Milwaukee, Wis.	12			0.55														.23				
Minneapolis, Minn.	25			0.05														.02				
Mobile, Ala.	6	D. N. a. m.	3.10 p. m.	3.07	6.43 a. m.	7.43 p. m.	0.73	.26	.41	.63	.89	1.00	1.02	1.04	1.07	1.15	1.28	1.43				
Modena, Utah	10			0.19														.12				
Montgomery, Ala.	6			2.13														.47				
Moorhead, Minn.	22			0.04														*				
Mount Tamalpais, Cal.	6			2.09														.38				
Mount Weather, Va.	7			2.08														.45				
Nantucket, Mass.	1			0.77														.48				
Nashville, Tenn.	6			0.42														.19				
New Haven, Conn.	7			2.01														.57				
New Orleans, La.	6			2.29														.67				
New York, N. Y.	1			0.64														.38				
Norfolk, Va.	1			0.31														.28				
Northfield, Vt.	7			1.52														.30				
North Head, Wash.	4			0.95														.37				
North Platte, Nebr.	3			0.01														.01				
Oklahoma, Okla.	5			0.38														.34				
Omaha, Nebr.	12			0.31														.21				
Oswego, N. Y.	24			0.90														*				
Palestine, Tex.	5			0.17														.09				
Parkersburg, W. Va.	1			0.30														.24				
Pensacola, Fla.	6	4.45 a. m.	3.15 p. m.	3.30	8.29 a. m.	9.19 a. m.	.04	.14	.21	.25	.37	.50	.56	.62	.66	.75	.87					
Do.					9.19 a. m.	10.09 a. m.		.96	1.03	1.11	1.14	1.19	1.24	1.41	1.57	1.66	1.71					
Do.					10.09 a. m.	10.50 a. m.		1.73	1.76	1.81	1.87	1.94	2.04	2.13	2.18	2.21						
Peoria, Ill.	12	4.45 p. m.	8.40 p. m.	0.49	5.52 p. m.	6.00 p. m.	.08	.27	.32													
Philadelphia, Pa.	7	9.40 a. m.	5.16 p. m.	1.60	3.59 p. m.	4.27 p. m.	.09	.17	.28	.46	.56	.62										
Phoenix, Ariz.	†																					
Pierre, S. Dak.	11			T.														T.				
Pittsburgh, Pa.	7			0.67														.23				
Pocatello, Idaho.	3-4			0.36														.24				
Point Reyes Light, Cal.	9			0.28														.16				
Port Huron, Mich.	13			0.30														.20				
Portland, Me.	1	7.03 p. m.	8.40 p. m.	0.33	7.47 p. m.	7.52 p. m.	.08	.25														
Portland, Oreg.	9			0.54														.25				
Providence, R. I.	7			0.93														.36				
Pueblo, Colo.	11			T.														T.				
Raleigh, N. C.	7			1.67														.49				
Rapid City, S. Dak.	11			0.01														.01				
Red Bluff, Cal.	6			0.98														.28				
Reno, Nev.	19			0.08														.06				
Richmond, Va.	1			0.49														.24				
Rochester, N. Y.	13			0.37														.16				
Roseburg, Oreg.	13			1.31														.16				
Roswell, N. Mex.	16			0.36														.07				
Sacramento, Cal.	6			0.42														.12				
St. Joseph, Mo.	5			0.23														.11				
St. Louis, Mo.	5			1.42														.31				
St. Paul, Minn.	25			0.04														*				
Salt Lake City, Utah	4			0.43														.16				
San Antonio, Tex.	21			1.39														.47				
San Diego, Cal.	2			0.09														.09				
Sand Key, Fla.	2	1.10 p. m.	7.40 p. m.	0.51	1.17 p. m.	1.30 p. m.	.02	.15	.31	.37								.18				
Sandusky, Ohio.	6			0.67														.33				
San Francisco, Cal.	9			0.42														.08				
San Jose, Cal.	10			0.08														.13				
San Luis Obispo, Cal.	10			0.50														*				
Santa Fe, N. Mex.	5			0.02														*				
Sault Ste. Marie, Mich.	8-9			0.41														*				
Savannah, Ga.	6			0.40														*				
Seranton, Pa.	24-25			2.00†														.23				
Seattle, Wash.	6			0.72														.13				
Sheridan, Wyo.	11			0.24														.25				
Shreveport, La.	6			0.28														.17				
Sioux City, Iowa.	12			1.03														.32				
Southeast Farallon, Cal.	9			0.39														*				
Spokane, Wash.	9			0.38														.25				
Springfield, Ill.	12			0.36														.17				
Springfield, Mo.	5			1.85														.32				
Syracuse, N. Y.	24-25			1.16†														*				
Tacoma, Wash.	12			0.63														.19				
Tampa, Fla.	7	D. N. a. m.	5.00 a. m.	0.72	4.04 a. m.	4.29 a. m.	.08	.26	.43	.53	.57	.63						.24				
Tatoosh Island, Wash.	6			0.71														.20				
Taylor, Tex.	21			1.15														*				
Terre Haute, Ind.	12	9.10 p. m.	D. N. p. m.	0.58	9.55 p. m.	10.04 p. m.	.05	.26	.43									.13				
Thomasville, Ga.	6-7			2.83														*				
Toledo, Ohio.	6-7			0.93														*				
Tonopah, Nev.	10			0.10														*				
Topeka, Kans.	5	4.54 p. m.	8.15 p. m.	1.77	5.01 p. m.	6.11 p. m.	.02	.15	.23	.26	.36	.68	.77	.78	.80	.87	.99	1.18	1.36			
Valentine, Nebr.	11			0.01														T.				
Vicksburg, Miss.	6			0.20														.13				
Walla Walla, Wash.	9			0.55														.19				
Washington, D. C.	7																					

\* Self-register not working.

† Record incomplete.

‡ No precipitation occurred during month.

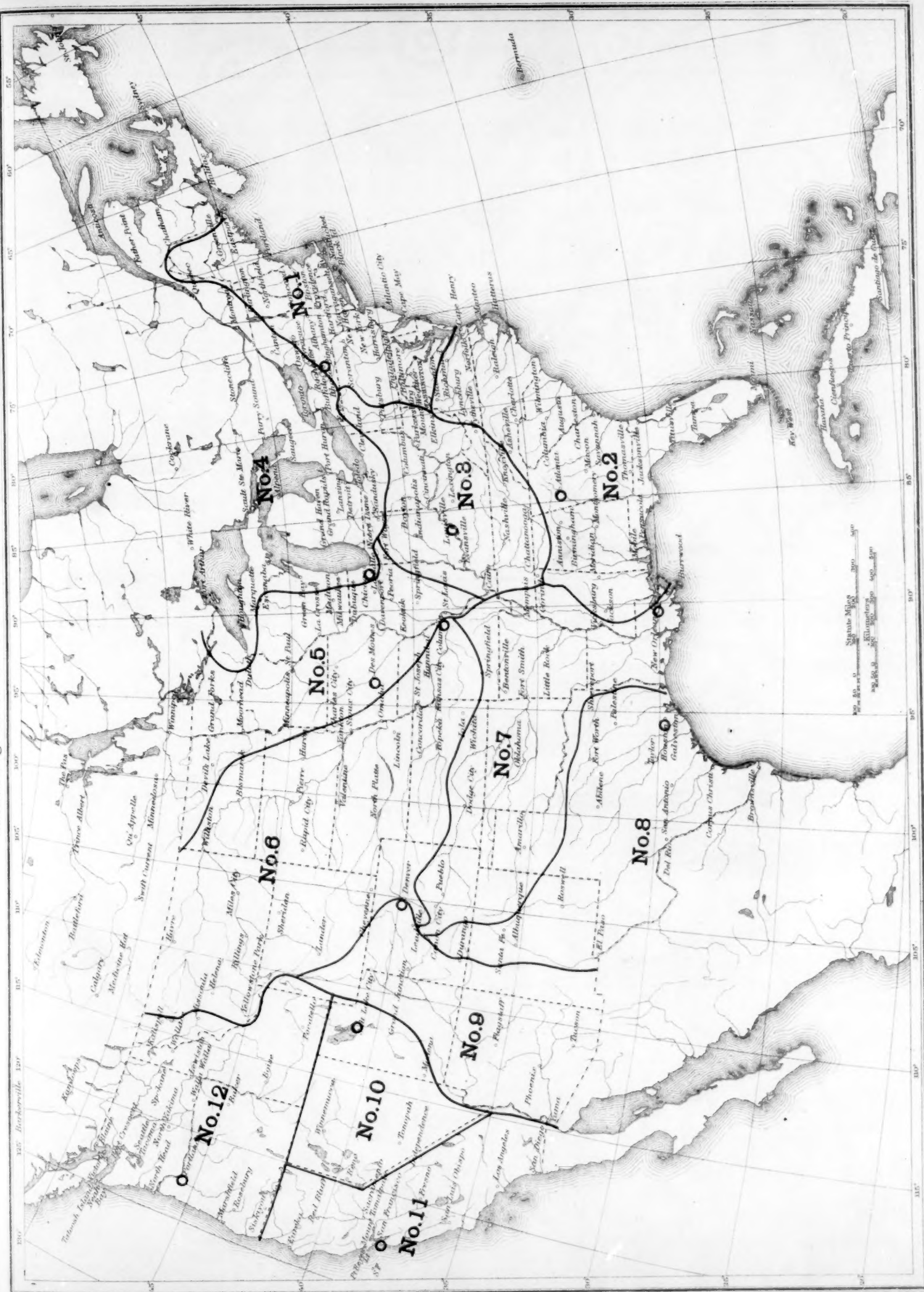


TABLE III.—Data furnished by the Canadian Meteorological Service, November, 1912.

Districts and stations.	Pressure in inches.			Temperature.						Precipitation.		
	Station reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean max. + mean min. +2.	Departure from normal.	Mean maximum.	Mean minimum.	Highest.	Lowest.	Total.	Departure from normal.	Total snowfall.
St. John's, N. F.	29.70	29.84	-.10	40.4	+ 3.9	46.7	34.2	65	22	7.68	+2.11	3.0
Sydney, C. B. I.	29.86	29.90	-.05	39.6	+ 2.5	45.1	34.1	64	24	4.44	-1.00	13.0
Halifax, N. S.	29.82	29.93	-.08	40.1	+ 2.8	47.7	32.5	64	19	5.89	+0.23	6.2
Grand Manan, N. B.	29.88	29.95	-.07	41.8	+ 1.9	47.6	36.0	61	26	3.99	-0.57	12.2
Yarmouth, N. S.	29.86	29.90	-.06	37.4	+ 1.9	42.4	32.4	60	22	4.01	+0.04	7.7
Charlottetown, P. E. I.	29.91	29.93	-.04	32.1	+ 1.1	37.7	26.5	58	14	4.64	+0.89	13.6
Chatham, N. B.	29.89	29.91	-.05	30.2	+ 1.3	34.6	25.9	56	13	4.20	+1.09	33.0
Father Point, Que.	29.60	29.94	-.08	30.4	+ 1.4	35.0	25.8	48	9	4.59	+0.83	15.8
Quebec, Que.	29.70	29.92	-.11	34.8	+ 3.0	39.7	29.8	59	16	5.48	+1.74	22.1
Montreal, Que.	29.29	29.92	-.09	30.8	+ 1.7	36.7	24.8	52	8	2.12	-0.46	9.4
Stonecliffe, Ont.	29.68	30.02	-.00	34.0	+ 2.3	39.7	28.4	59	6	6.69	+4.15	38.8
Ottawa, Ont.	29.65	29.97	-.07	38.8	+ 3.8	45.3	32.4	58	21	3.65	+0.41	8.5
Kingston, Ont.	29.58	29.97	-.07	40.4	+ 4.8	46.8	34.1	59	23	2.46	-0.68	2.2
Toronto, Ont.	29.33	29.99	-.06	39.7	+ 2.9	45.6	33.8	56	18	2.31	-1.06	1.4
White River, Ont.	29.23	29.94	-.07	37.6	+ 2.6	43.2	32.1	60	22	5.97	+2.27	6.0
Port Stanley, Ont.	29.23	29.94	-.07	34.6	+ 2.5	40.8	28.3	63	12	4.59	+0.22	18.2
Southampton, Ont.	29.23	29.97	-.03	30.4	+ 6.4	37.3	23.5	48	3	0.42	-0.91	2.9
Parry Sound, Ont.	29.24	29.96	-.08	28.8	+10.8	33.9	23.7	49	14	0.11	-0.97	1.0
Port Arthur, Ont.	29.10	29.94	-.10	28.4	+11.1	36.3	20.5	53	4	0.29	-0.71	2.9
Winnipeg, Man.	28.08	29.90	-.10	30.0	+11.2	39.2	20.9	60	7	0.48	-0.41	4.6
Minnedosa, Man.	27.61	29.91	-.09	38.5	+11.1	49.0	28.0	60	8	0.29	-0.63	1.4
Qu'Appelle, Sask.	27.33	29.94	-.08	34.7	+11.5	43.5	25.9	59	14	0.22	-0.47	2.0
Medicine Hat, Alberta.	27.33	29.91	-.07	32.2	+ 6.4	42.7	21.6	58	11	0.68	-0.20	6.8
Swift Current, Sask.	26.31	30.01	-.05	28.2	+ 2.4	34.9	21.5	48	- 4	1.41	-0.86	12.2
Calgary, Alberta.	25.30	29.87	-.10	30.4	+ 7.5	38.6	22.2	54	- 2	0.40	-0.18	3.8
Banff, Alberta.	27.54	29.87	-.10	30.4	+ 7.5	38.6	22.2	54	- 2	0.40	-0.18	3.8
Edmonton, Alberta.	27.54	29.87	-.10	30.4	+ 7.5	38.6	22.2	54	- 2	0.40	-0.18	3.8
Prince Albert, Sask.	28.66	29.96	-.00	37.6	+ 4.2	43.0	32.3	53	20	0.82	-0.64	1.0
Battleford, Sask.	29.89	29.99	-.00	45.2	+ 3.0	49.3	41.1	55	30	5.04	-1.93	23.5
Kamloops, B. C.	25.52	29.88	-.02	26.7	+ 3.1	32.5	20.9	44	8	2.35	-0.94	23.5
Victoria, B. C.	25.52	29.88	-.02	26.7	+ 3.1	32.5	20.9	44	8	2.35	-0.94	23.5
Barkerville, B. C.	29.98	30.14	+0.09	67.6	- 1.1	72.6	62.6	78	53	3.24	-1.14	.....
Hamilton, Bermuda.	29.98	30.14	+0.09	67.6	- 1.1	72.6	62.6	78	53	3.24	-1.14	.....



Climatological Districts of the United States.





# 106 Climatological Sections of the United States.

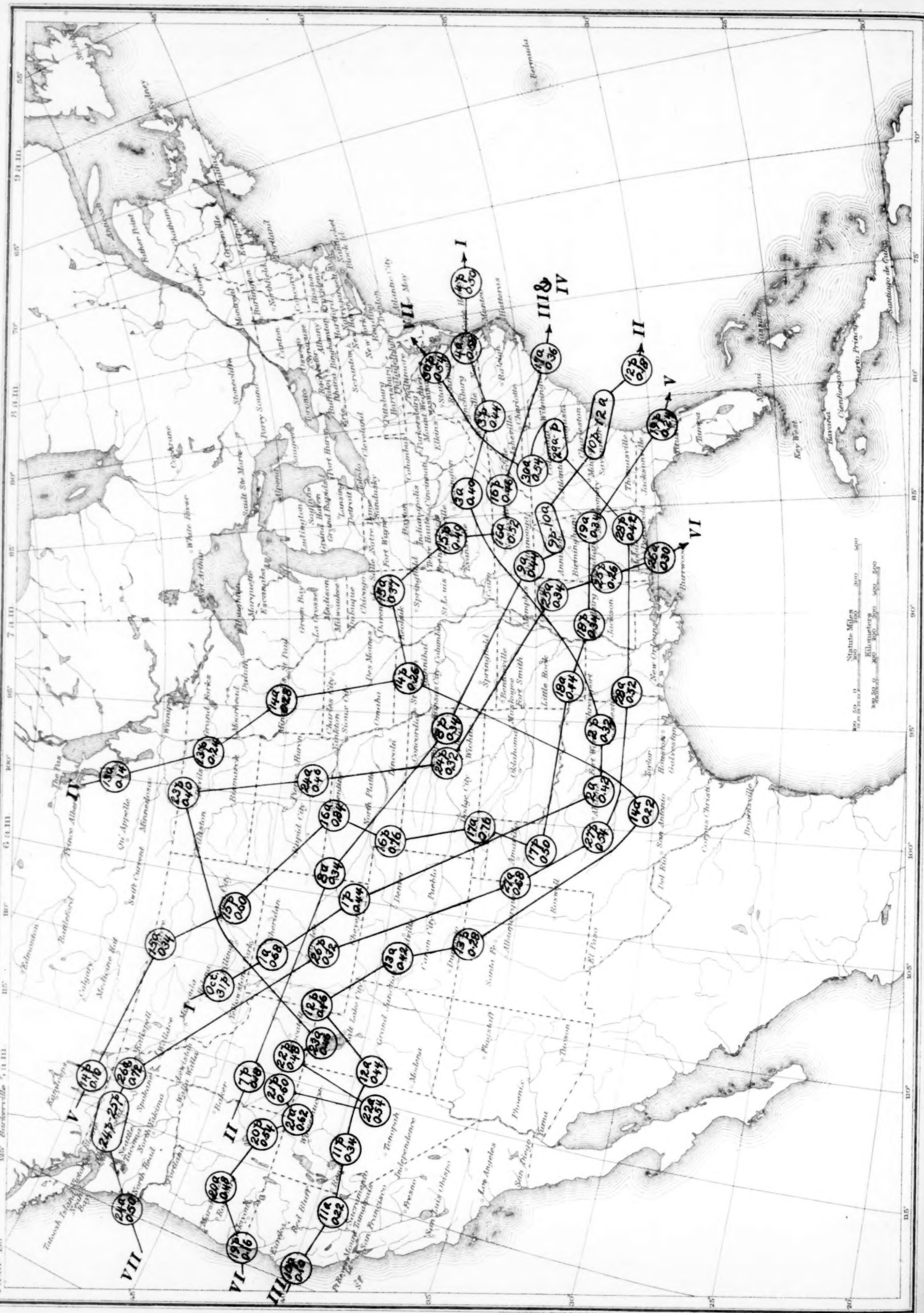




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Chart II. Tracks of Centers of High Areas, November, 1912.





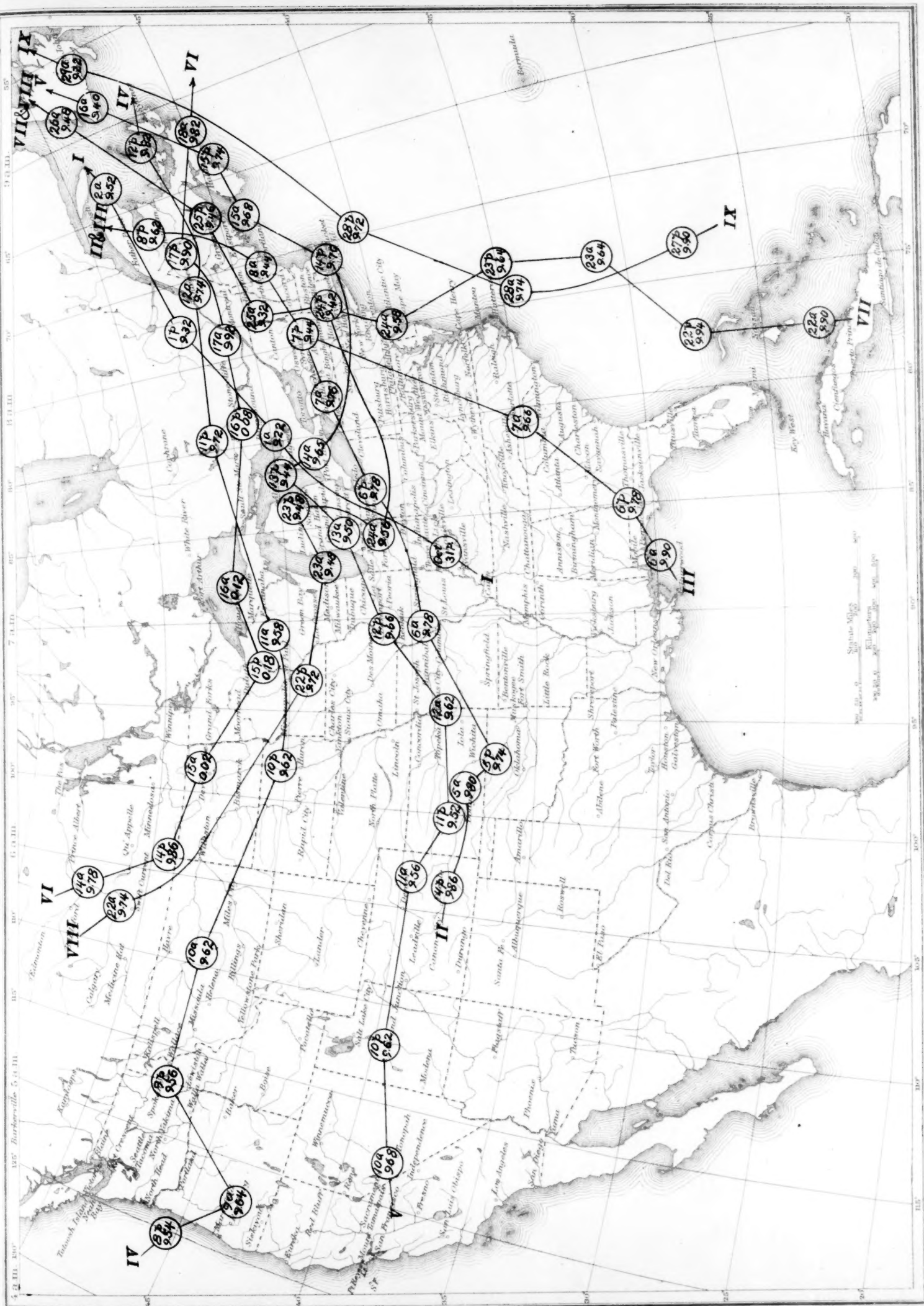






Chart V. Total Precipitation, November, 1912.



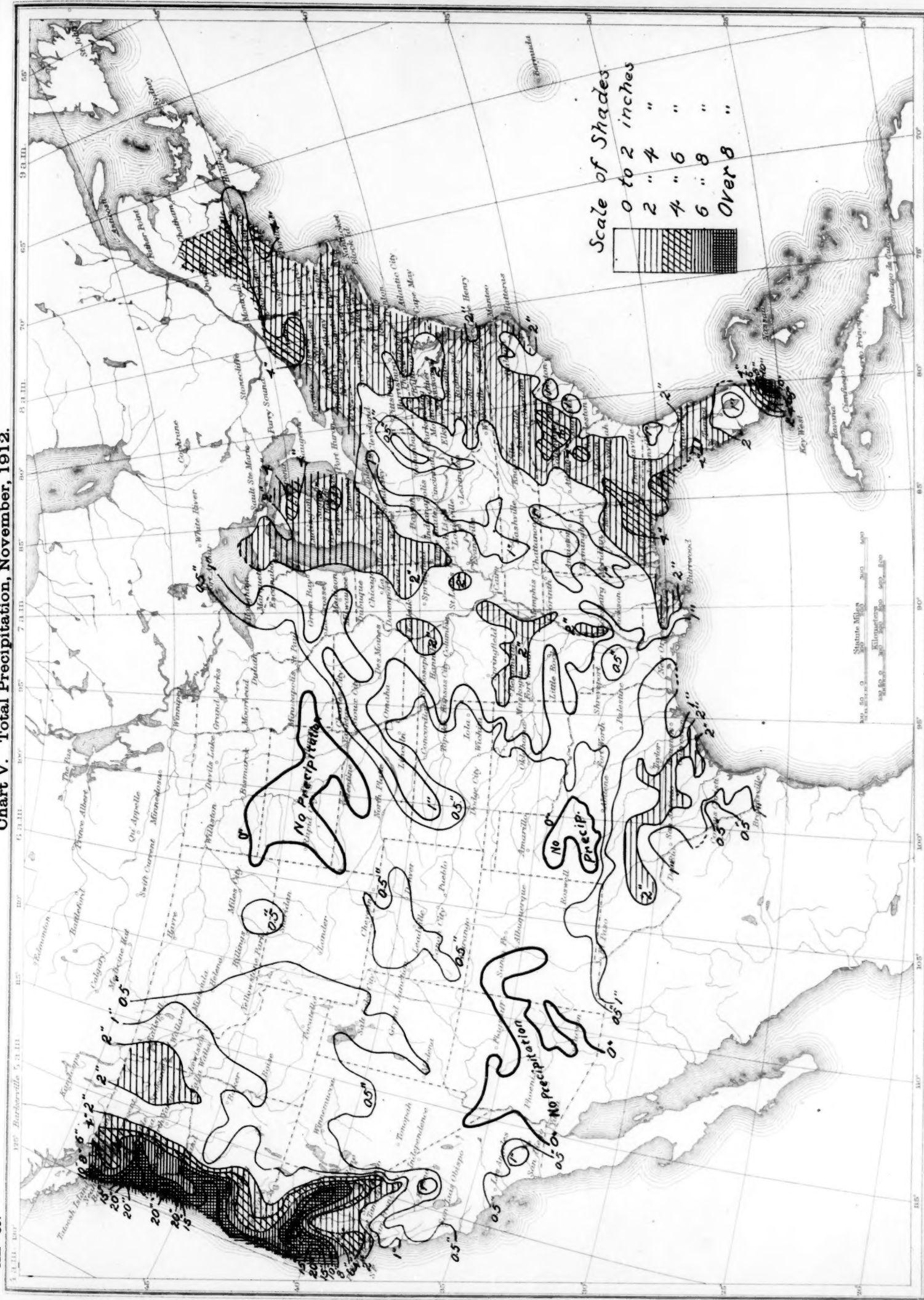




Chart VI. Percentage of Clear Sky between Sunrise and Sunset, November, 1912.

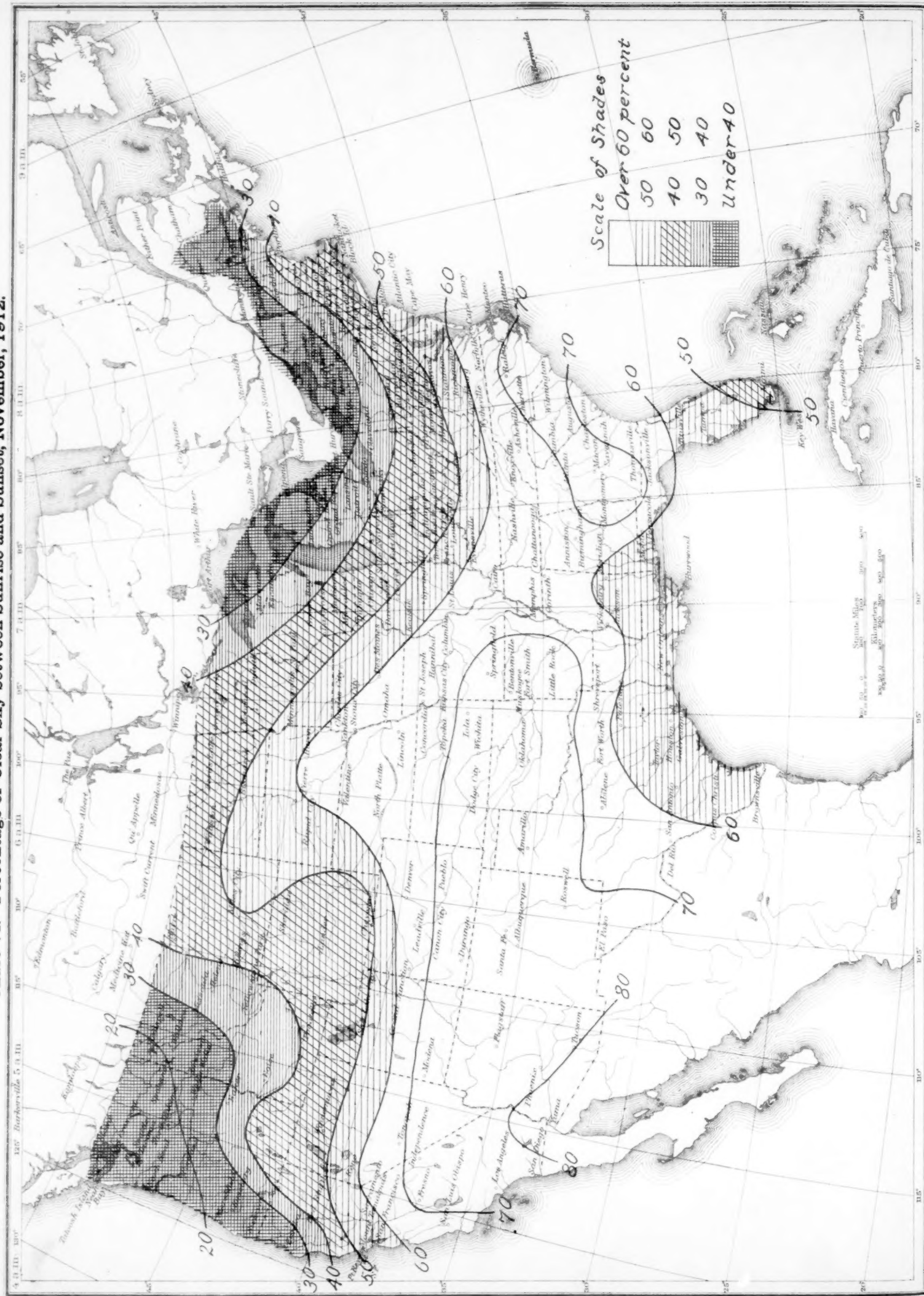


Chart VII. Isobars and Isotherms at Sea Level; Prevailing Winds, November, 1912.





Chart VII. Isobars and Isotherms at Sea Level; Prevailing Winds, November, 1912.

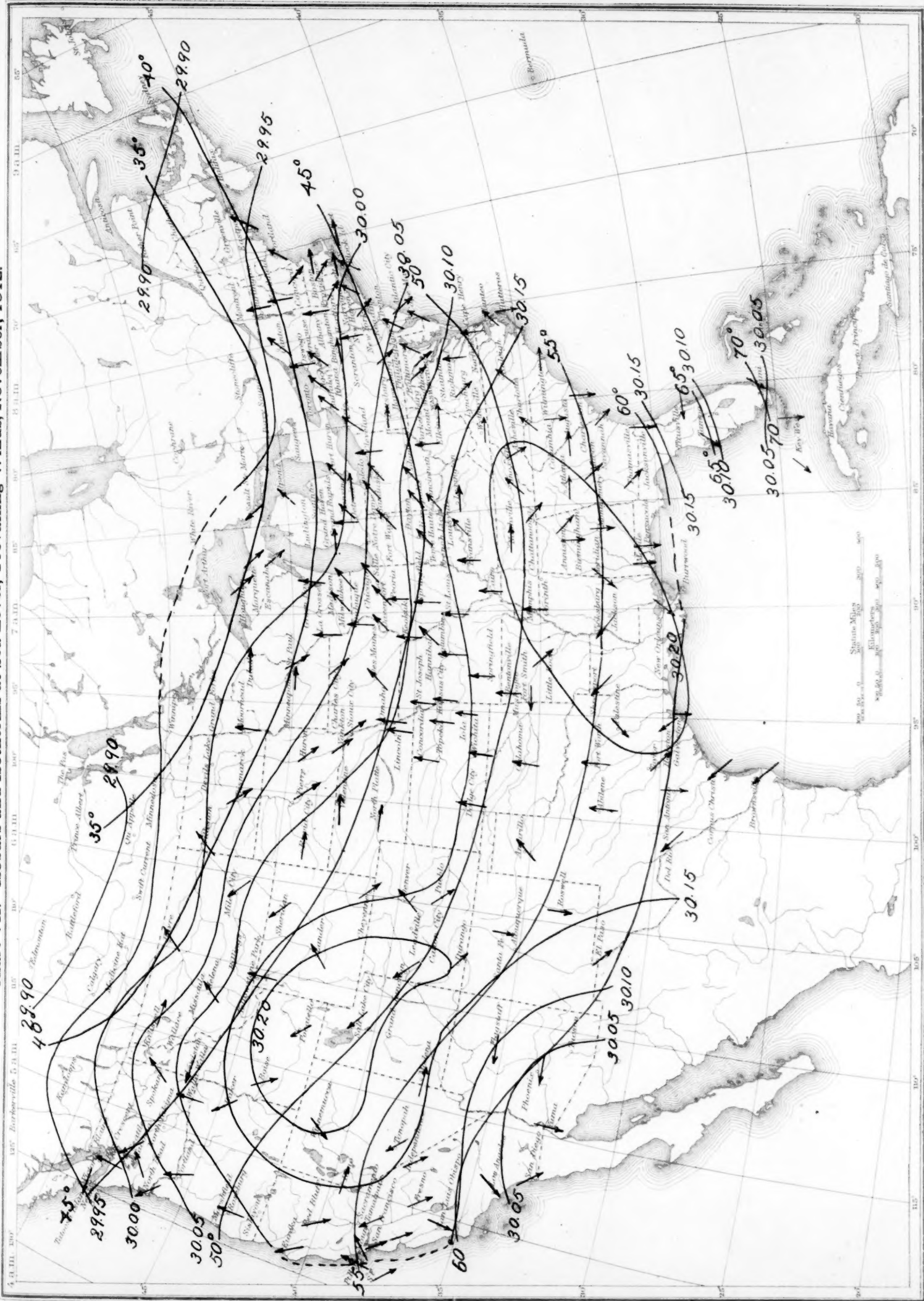
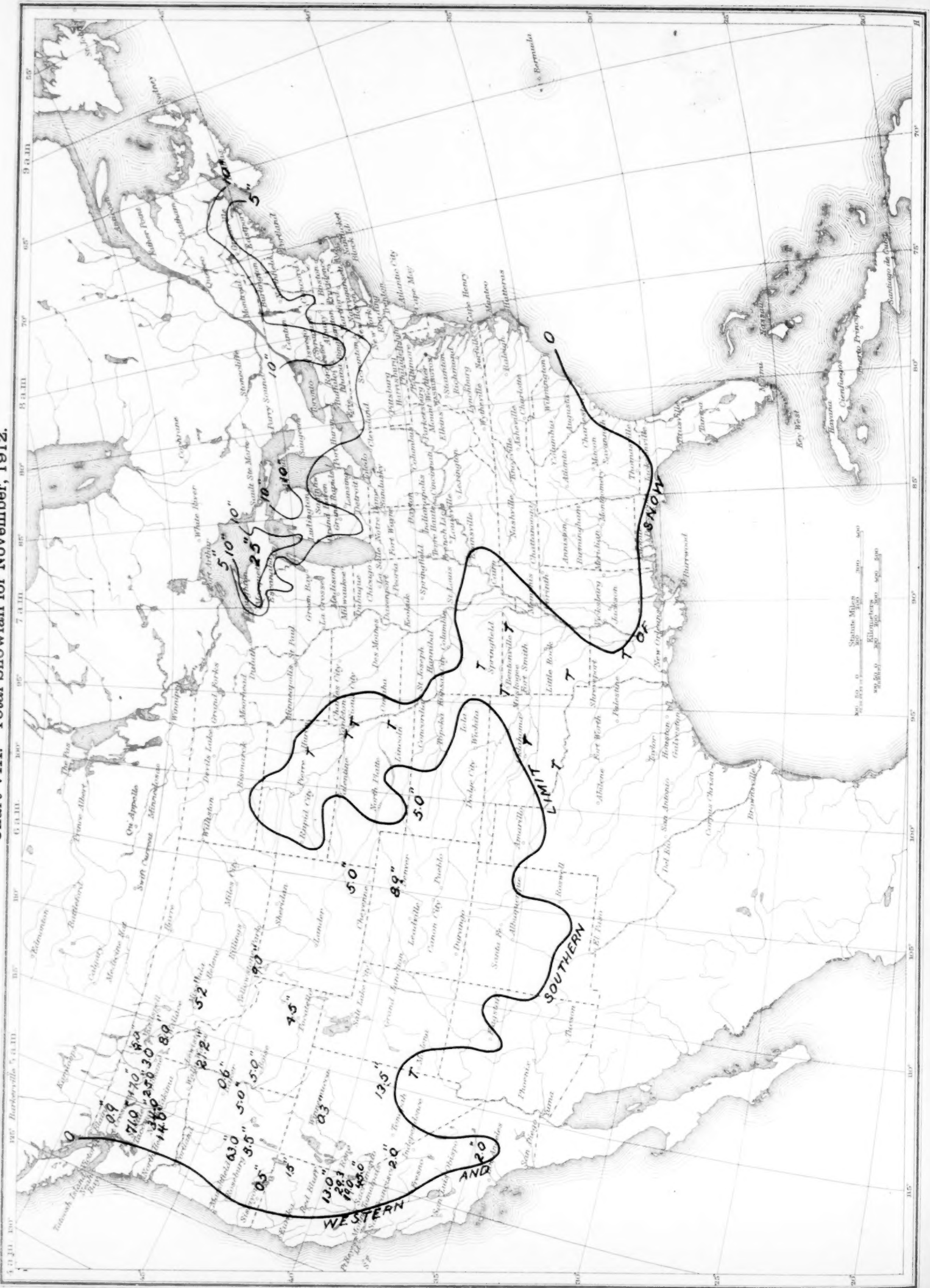




Chart VIII. Total Snowfall for November, 1912.



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